

The Canadian Builder

:: and Carpenter ::

PUBLISHED ONCE A MONTH BY THE COMMERCIAL PRESS, LIMITED

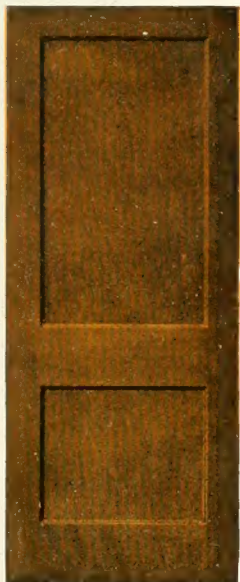
Vol. 2

TORONTO, NOVEMBER, 1912

No. 11



No. 245



No. 152

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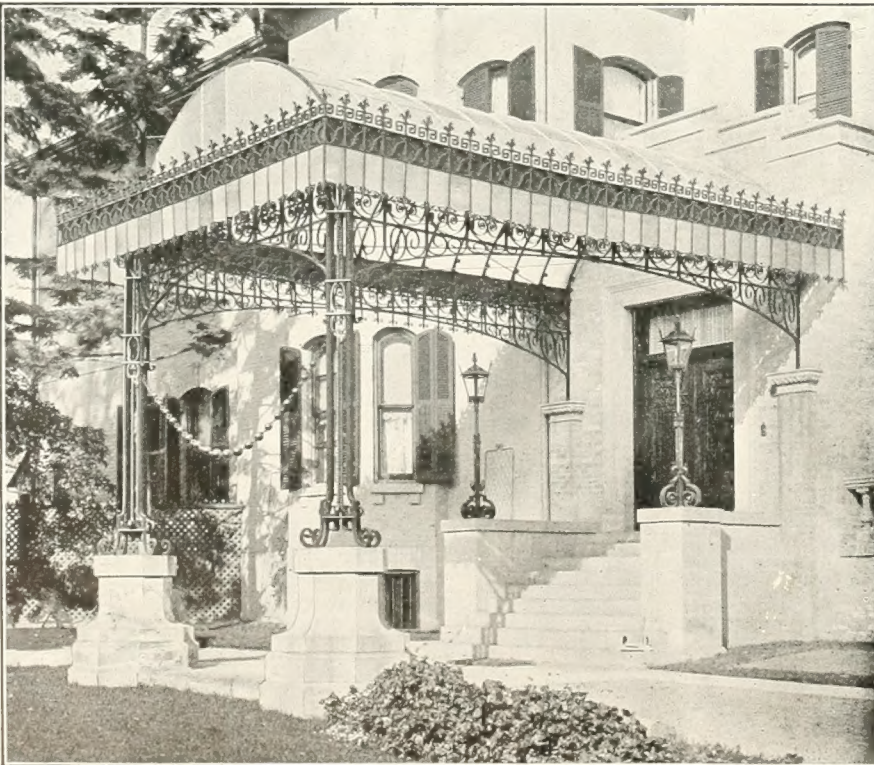
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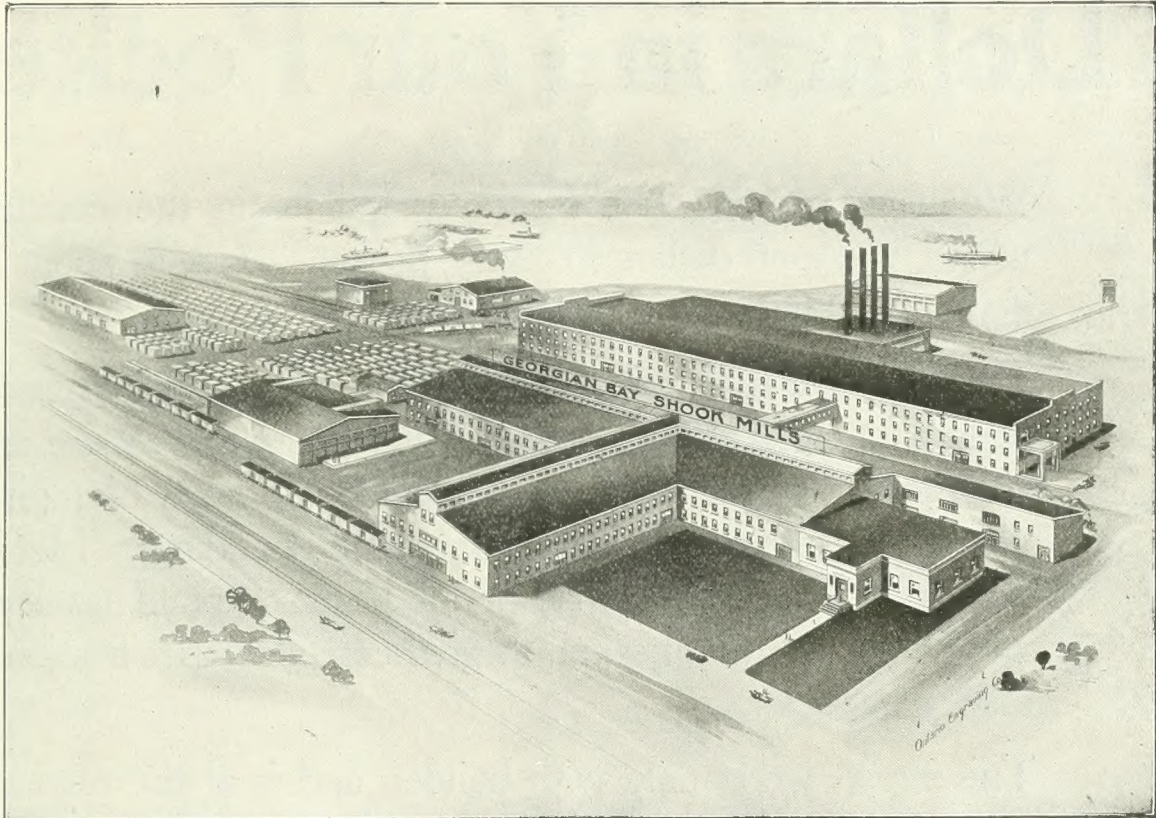


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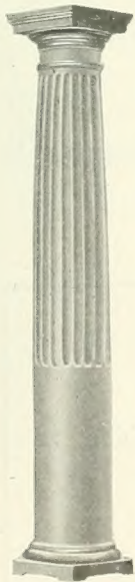
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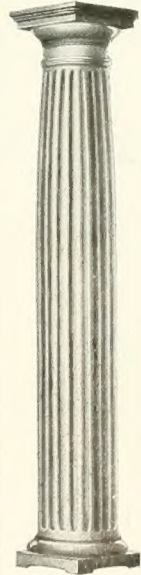
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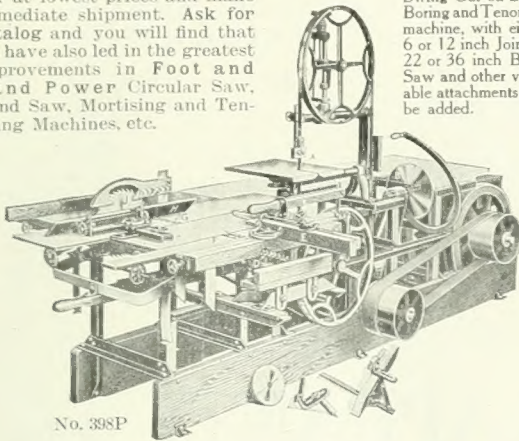
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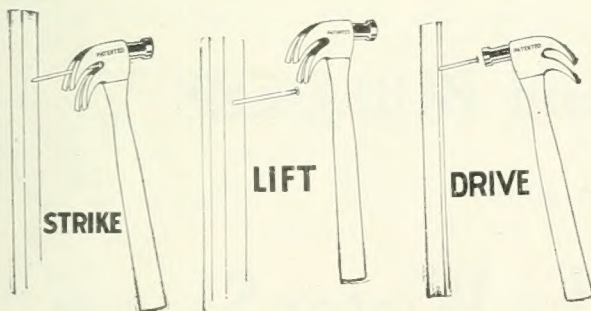
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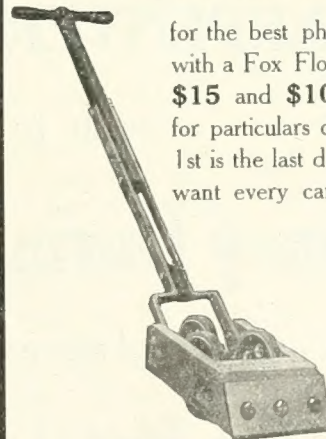


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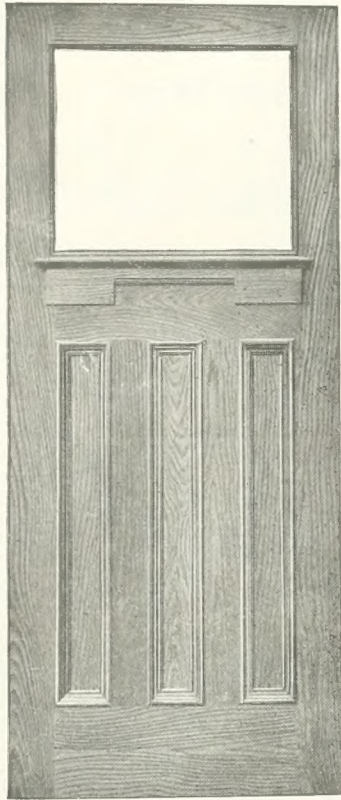
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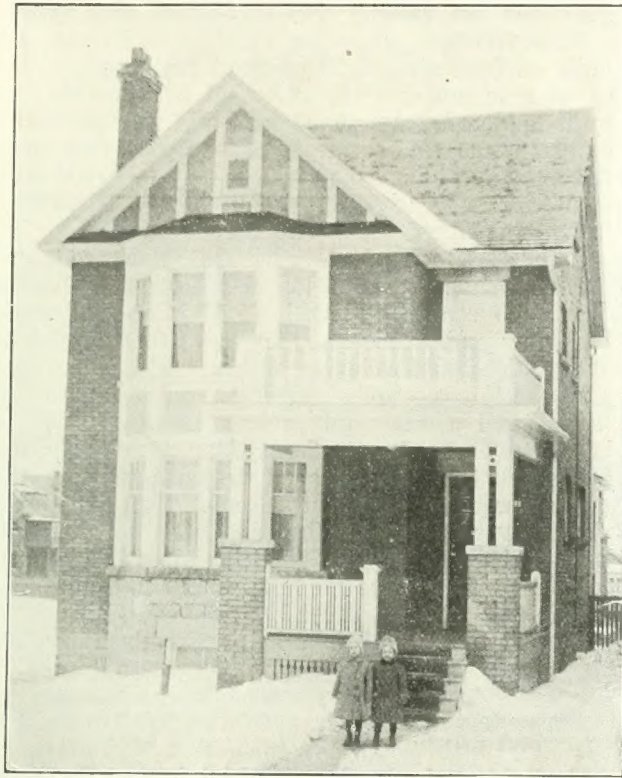
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¶ For a shingle that has only been made about three or four years it should interest you to know that more "Galt" Shingles have been sold this season in Ontario than those of any other make. A fact like this speaks for itself.



An Eight-Room Brick House, Erected at a Total Cost of \$3,800

Builder
C. J. Powley

Erected for
Mrs. Edith Wrigley

TASTEFUL arrangement, convenience, and utilization of all corners are features in a eight-room brick house erected on the cross hall plan at 91 Constance St., Toronto, for Mrs. Edith Wrigley. There is not an inch of waste space in it. The front door opens into a lobby containing racks for hats and coats. The hall is spacious, the beam ceiling giving it a good appearance. A very useful article of furniture is the high back hall seat shown in one of the illustrations. Here may be stored rubbers, etc., when not in use. Underneath the stairway is a clothes closet where overcoats may be stored when not in use.

From the hall doors lead to the living room, dining room and kitchen. Disappearing doors are used for living and dining room entrances while a swinging door fitted with a floor hinge made by the Chicago Spring Butt Co., is used to the kitchen. This door may be allowed to swing easily, or by pressing a little spring with the foot will remain open at any position.

The living room woodwork is finished in white enamel with a gas log tile fireplace and mantle to match. The walls are tinted with Sherwin-Williams flat tone paint, a molding running close to the ceiling which is finished in stucco.

The dining room and hall are finished in oak, the dining room being panelled with a buff burlap, up to a plate rail, while the ceiling is finished in stucco. Leaded windows are located on the side and French doors open out to a verandah at the rear.

In the pantry cupboards are built along one wall as shown in one of the illustrations. At the right of the cupboards is a "dumb waiter" where foodstuffs are raised from or lowered to the cellar. In one corner of the pantry is a raised floor over the rear entrance to the cellar. This is about 30 inches high and serves as a table.

A view was taken from the doorway entering the kitchen from the pantry. The kitchen is equipped with a 50-inch one-piece sink and drain board made by the

Standard Ideal Co., and a Gurney-Oxford cabinet gas range.

Side Entrance, Milk Box, Etc.

There is a side entrance to the cellar leading to either the kitchen or basement. Between the kitchen door leading to this entrance and the kitchen door leading to the hall is a broom closet, the height of an ordinary door and the width of a carpet sweeper, the closet being used for the storage of brooms, dusters, etc.

In this narrow closet is a small door which opens on a chute from the bath room above. In the bath room is another little door painted the same color as the woodwork (white). All soiled towels, linen, etc., are thrown into this chute and drop down to the clothes basket in the cellar.

Another very useful arrangement is the double door milk box at the side entrance. A door on the outside allows the milkman or the baker to place the milk and bread in this cupboard without the necessity of running to the door. In winter the milk, if left on the verandah, freezes and this prevents that from happening. To remove these materials the door on the inside is opened. The inner door has a latch inside, but the outer door is held shut by a friction latch.

Heating Arrangement.

The basement is divided into two parts, one containing the coal bin and Gurney hot water furnace.

The hot water heating system is equipped with a Honeywell generator, a device which by the use of quicksilver, quickens the circulation of water throughout the system. The generator allows the use of smaller pipe and the saving thus made more than paying for the device. "Sovereign" radiators, made by the Taylor-Forbes Company, Guelph, are used throughout the house, all piping in the basement being wrapped in asbestos.

A pair of enameled iron roll rim washtubs, made

by the Standard Ideal Company, are located in the basement, and there is also an extra water closet for the use of children and maid. This prevents a great deal of traffic on the stairs since children otherwise enter with muddy boots and track the mud upstairs.

The plan of the upstairs is shown in the drawings. In the library is a coal fireplace with pressed brick mantle, also bookcases, table, etc. One of the illustrations shows an arrangement of cosy seat and bookcase not often seen but comfortable and useful for the storage of books, magazines and other papers.

The bathroom contains the usual equipment consisting of a Standard sanitary bathtub, Standard Ideal lavatory and one of the "B.O.T." Manufacturing Company's closets with porcelain tank. The brass goods and a shower bath were supplied by the James Morrison Brass Manufacturing Company, Toronto. Above the wash basin is the medicine cupboard, the front of which has a bevelled mirror. The clothes chute for the soiled towels, etc., is referred to above. Linens are kept in the linen closet, the door opening from the hall.

The children's play room opens onto an enclosed sunroom with windows on three sides, any of which may be readily opened, casement window adjusters made by the Belleville Hardware Manufacturing Company being used. The sunroom makes a comfortable sewing room or a sleeping apartment in hot weather. In this back room a small closet was provided in an unused corner behind the swing of a door, this being an extra and not shown in the plans.

The attic contains one large room equipped with a wash basin so that in case of illness this room may be isolated from the rest of the house. It is suitable for a billiard or maid's room.

Under the front gable of the house on this floor is a stove room. This was finished as an extra, being rough plastered for the purpose.

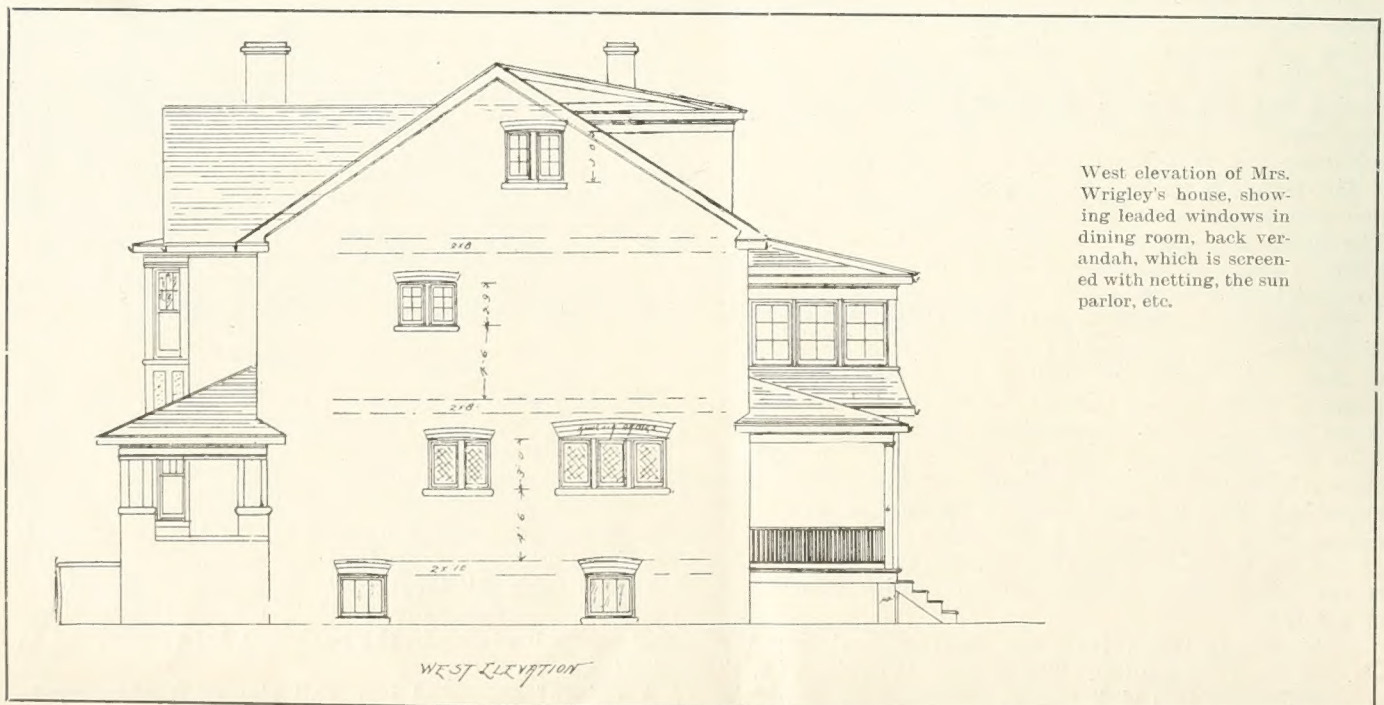
The house is screened and weather-stripped by the Malott Weather Strip Company, Toronto, the mantel being supplied by the Vokes Hardware Company, Toronto, the glass by the Consolidated Plate Glass Company, Toronto, and the hardware by Rice, Lewis & Son, Toronto.

The following selections from the specifications will show the reader the construction of this house.

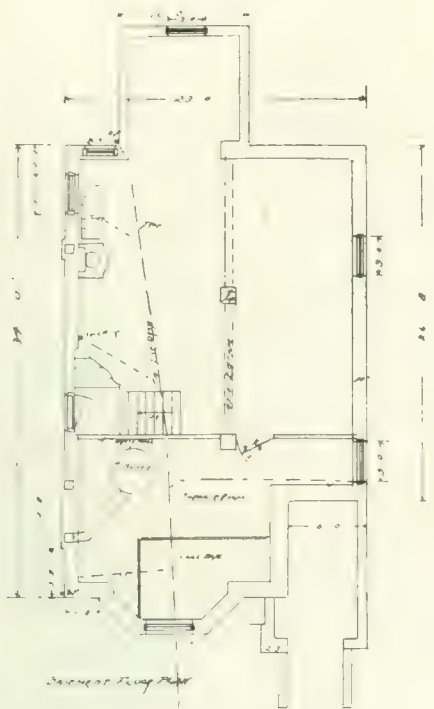
Stone Work: All stone walls to be 16 inches thick built on footings 6 x 24 of good flat stone. All walls to be true and plumb, well tied and bonded, mortar to be made of clean, sharp sand and well slacked fresh lime. Walls to be selected stone and tuck pointed. All outside walls to be plastered up to grade with cement mortar before filling in any earth. Piers in cellar to be 14 x 14 on footings 24 x 24 x 8.

Brickwork: To be hard burnt, dark red, pressed brick. Walls to be 9 inches thick with headers at every 5th course laid with $\frac{3}{8}$ V joint. All openings for doors and windows to have 4 x 6 cambered lintels over which build relieving arches, build ledges between joist the thickness of strapping to extend one in. above floors. All window sills grey rock faced stone, stone heads to be used over front door and windows. All joints must be well flushed up with mortar, and all walls carried up true and plumb. Iron anchors to be placed every 8 feet on first and attic floors, front and rear anchors to be 9 x 9 struck joints inside and out, top 12 courses to be laid in cement mortar and have 9-inch tile flues to extend 2 feet above roof. Rear porch to be solid brick, brick fire-place to be constructed in sitting room of buff pressed brick. Pay for water to be used by masons and plasterer.

Carpenter Work: Ground floor joist to be 2 x 10. First and attic floor joist to be 2 x 8. Rafters 2 x 6 and studding to be 2 x 4. Lintels 4 x 6. Beam in basement 10 x 10. Bridging 2 x 2. Strapping 1 x 2. Bondstrip $\frac{3}{8}$ x 2. All joist, studding and rafters to be placed at 16-inch centres. Double joist under partitions and around all openings; joists to have a row of herring bone bridging in all spaces over 8 feet. Flooring in kitchen, first and attic floors to be pine well nailed at every joist. Ground floor to be $\frac{7}{8}$ -inch oak laid over a dressed hemlock floor. Roof to be sheeted with good sound hemlock over which lay one thickness of asbestos weighing 14 lbs. per square and No. 1 shingles. Verandah ceiling to be $\frac{7}{8}$ -inch clear Georgia pine with mold against beam. Place finishing hardware furnished by owner and supply all nails, hinges, sashweights, etc. required. First floor, dining room



West elevation of Mrs. Wrigley's house, showing leaded windows in dining room, back verandah, which is screened with netting, the sun parlor, etc.

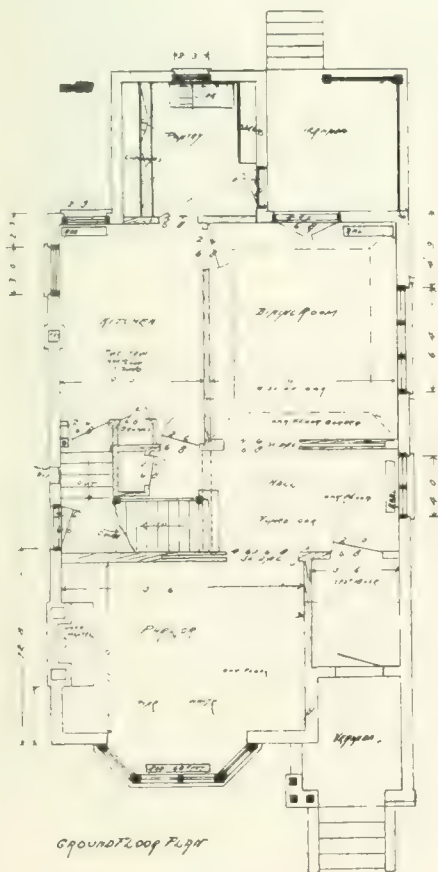


Basement floor plan.

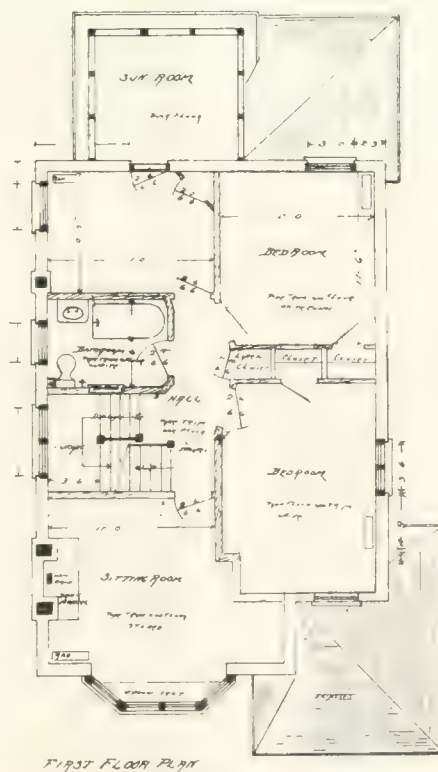


Rear elevation.

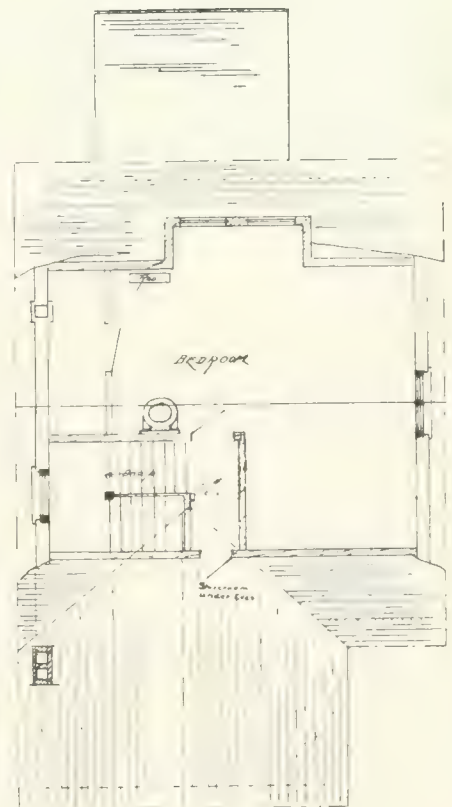
Plans of
Mrs. Wrigley's
House
Showing how
Rooms are
Arranged to
Save Steps



Ground floor plan.



First floor plan.



Second floor plan.

and hall trim to be selected oak with oak straps, plate rail and cornice mould in dining room. Parlor clear white pine, white enamel finish with cornice mould. First floor staircase throughout to be of oak with pine to attic. Doors on first floor to be of oak where trimmed with oak. Shelves to be placed in all closets with pantry cupboard as shown on plan. Build coal bins in cellar as directed by owner, also clothes chute and medicine cabinet in bathroom. All work to be done in a first-class manner to the satisfaction of owner.

Plastering: Finish in stucco front bay and dormer as shown on front elevation of plans. Lath to be used a good quality pine, joints broken at every 8th lath. Mortar to be made of good, sharp sand and well slacked lime run at least one week before using. Use proper proportions of hair to make a good job. Plasterer to sand floors to protect them from dropping mortar. All work to have two coats, putty coat to be troweled smooth and all walls left true and plumb. Clean away all rubbish after job is complete, and leave work in first-class condition. Lath and plaster ceiling in furnace room in basement. Finish dining room in white sand stucco to plate rail, sitting room also in stucco.

The cost of construction is made up as follows:—

Contractor's price (including fence and sodding)	\$2,800
Plumbing, heating, mantel and finishing hardware	900
Extras	100
Total	\$3,800

Calgary Taking up Town Planning Seriously

A report of the city planning commission was submitted to the city council on October 15 through James W. Davidson, chairman. In this report Mr. Davidson suggests the employment of Thos. W. Mawson, the Liverpool planning expert, to investigate Calgary conditions and make recommendations along the lines of civic beauty. He also recommends that a money by-law, providing for \$10,000, be passed, the proceeds to be devoted to the purposes of the commission. The report is, in part, as follows:—

To the Mayor and Council, City of Calgary:—

Gentlemen,—We beg leave to submit the following report:—

First—We would respectfully recommend the engaging of Thomas H. Mawson of Liverpool, England, or some other expert regarded as possessing equal qualifications, to investigate conditions in Calgary and make a report covering the traffic and housing problems, and a comprehensive scheme for parks, playgrounds, boulevard drives, a proposed civic centre and such other matters as generally come under the head of "City Planning."

Second—For the purpose of meeting the necessary expenses in connection with the employment of an expert, and the preparation and publication of a report for distribution among our citizens, we would respectfully request that your honorable body put before the electors a money by-law for the sum of at least ten thousand (\$10,000) dollars for town planning purposes.

The members of the council are undoubtedly aware that Vancouver, Winnipeg, Saskatoon, Edmonton and Lethbridge have moved in this matter of town planning. All will readily concede that Calgary can ill afford to lag behind in a matter of such supreme im-

portance to the present and future welfare of this city. We trust that whatever action you deem advisable shall be taken without great delay.

We have the honor to be,

Your obedient servants,

(Sgd.) JAS. W. DAVIDSON,
Chairman of Executive Committee.

The council have approved of this report and will submit to the people a by-law for \$10,000 to cover the expenses involved in securing a plan and report.

Calgary's Building By-Laws

Under the direction of Mr. H. A. Sylvester, superintendent of Calgary's building department, new building by-laws for that city were drafted and passed by the Council on October 3. The following are some of the provisions:—

No construction apparatus, such as derricks, to be used on any job until a certified test has been made showing the load which the apparatus safely withstood, and no such apparatus to be subjected to a greater load than the test allows. Tests will be made allowing a factor of safety of six in the apparatus and eliminate danger to lives from this source.

All buildings over one storey in height must have concrete foundations at least 7 feet below grade, with footings figured for uniformly distributing the loads.

All buildings over six storeys to be fireproof. Fire-towers are to be provided on all buildings having three storeys and over in height, to be enclosed in fire-escapes having indirect access; 8-inch terra cotta outside curtain walls to be allowed up to 14 feet in height.

Brick, Stucco, Concrete and Frame Buildings.

All business buildings within the city limits over two storeys in height to be of slow burning construction: this meaning that if of timber, all exposed surfaces to be furred with metal lath and plastered with ¾-in. cement plaster. All frame business buildings are to have firewalls at least every 50 feet from one outside wall. Brick buildings less than three storeys in height to have fire walls every 50 feet.

Stucco veneer of ¾-in. cement plaster on metal lath may take the place of brick veneer. The side walls of all frame buildings to be at least 30 inches from the lot line. Brick veneer or stucco to be at least 30 in. from the lot line if there be windows on that side. No frame building to be erected on a twenty-five foot lot may be wider than 19 feet.

Reinforced concrete construction is covered by the simple requirement that such construction shall be calculated according to the accepted formulae of present concrete engineering practice.

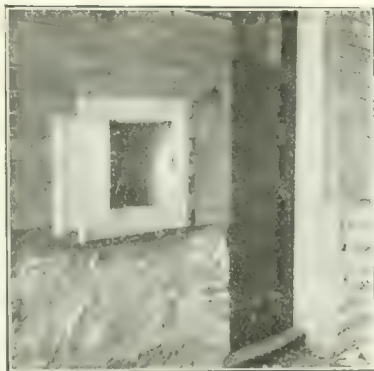
The Apartment House.

No apartment house shall be erected in the residential districts without the consent of two-thirds of the owners in the block. Apartment blocks erected in the residential district shall be not less than 10 feet from the rear, 3 feet from each side, and 30 feet from the front lot line. No apartments to be allowed in the basements except janitor's quarters, unless the ceiling be at least 6 feet above grade, when the basement shall be considered as one storey.

Some of the Sanitary Regulations.

No new building to be occupied by persons unless a certificate has been given out by the Sanitary In-

Views Showing Conveniences in House of Mrs. E. Wrigley



The milkman and baker leave their supplies in this cupboard.



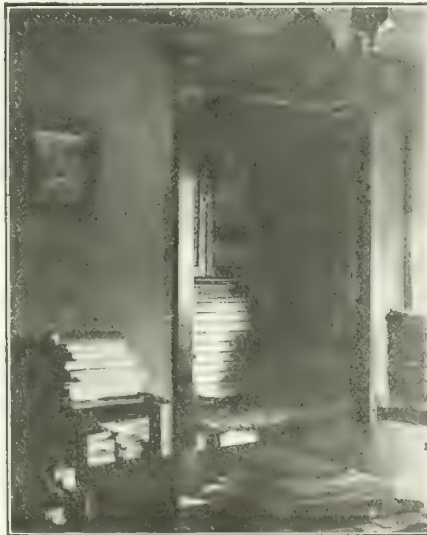
The maid removes the supplies at B. Broom and carpet sweeper are kept in closet A where there is a connection to soiled cloths chute to basement.



Bathroom equipped with medicine closet, shower bath, etc., and opening to soiled cloths chute, the clothes dropping into basket in cellar.



A is a row of cupboards; B, drawers; and C the dumb waiter.



The recessed cosy seat and bookcases in the den.



Sun parlor and sewing room.



Living room showing gas fire logs.



View showing large hall seat, and the method of decorating the dining room.

spector. There must be 500 cubic feet of free air for each sleeping person. Ten per cent. of the floor area to be the window glass area for each room. There are to be not more than two rooms between corridors and outside light. All buildings must have positive direct ventilation. Hot-air furnaces must have fresh air supply from the outside air. All residences must set back from the lot line at least 20 feet. All pantries and cupboards for the storage of food must have outside ventilation.

Uniform Building By-Laws in Western Canada

A conference to discuss uniform building by-laws, called together by Mr. H. A. Sylvester, superintendent of the Building Department of Calgary, Alta., met in Calgary October 24 to 26.

Mr. J. I. Fish, assistant building inspector of Calgary, occupied the chair when the convention was called to order for the first session. Among the delegates were Mayor James Findlay, of Vancouver; E. Goodman Jones, of Moose Jaw; A. E. Young, South Vancouver; M. Mackie, Swift Current; John Lee, Tofield; H. Merres, Red Deer; J. E. Harrison, Saskatoon; Thomas Watson, provincial sanitary inspector for Saskatchewan; F. Falls, Regina.

The morning session was consumed chiefly in discussion of a proposed uniform building law for the Western provinces. The advantages of such an ordinance were pointed out by different speakers during the course of an informal discussion, and ways and means suggested for bringing the proposed change about. Calgary's new building by-law was explained to the visiting delegates and was endorsed by the visitors almost without exception.

Second Day's Session.

The morning of the second day was taken up with a further discussion of a uniform building code for the West, and considerable progress and discussion took place.

Mayor Mitchell, of Calgary, met the delegates, and told of the importance of having a complete up-to-date building code for the Western cities. He told those present that by meeting together and discussing the code, they would be able to get in all its details, which would result in substantial and uniform building codes. The inspectors afterwards resumed their work on the code and made considerable progress.

The rest of the day was spent in pleasure. During the afternoon the time was spent seeing Calgary in automobiles. A feature of the trip was the visit to a number of large buildings which are in course of construction. Several points which came to the notice of the inspectors while looking over these buildings were discussed, and the trip, besides being a sight-seeing one, was also an educative one.

In the evening an informal banquet was held at the Grosvenor and was followed by a theatre party to the Sherman Grand.

Amongst those present at the theatre were: H. L. Sylvester, J. I. Fish, E. Jones, Moose Jaw; A. E. Young, South Vancouver; M. Mackie, Swift Current; John Lee, Tofield; H. Merres, Red Deer; J. E. Harrison, Saskatoon; Thomas Watson, provincial sanitary inspector for Saskatchewan; F. Falls, Regina; and others.

On October 26 another meeting was held when various resolutions were received and discussed. Another important business was the forming of a building inspectors' association, the appointing of officers, and the

selection of the place of the next convention. The report of the third day's meeting has not been received in time for this issue of The Canadian Builder, but will be published in the next issue.

Master Builders' Association of Vancouver

The Master Builders' Association of Vancouver, B. C., at their second annual meeting elected the following officers: President, Mr. F. W. Nicholson (re-elected); vice-president, Mr. Booker; secretary, Mr. Skene. A committee of the association was appointed to confer with the architects with a view to arriving at standard forms of contract and specifications.

Correspondence and Discussions

Readers are invited to send replies to questions asked by readers of The Canadian Builder and these will be paid for at regular editorial rates. Anyone desiring the names of firms manufacturing certain lines will be answered in this department.

Comments on articles published in The Canadian Builder are welcomed and all letters containing good ideas will be paid for.—Editor.

Which of the Two Intersecting Points is Correct?

Referring to the inquiry on page 27 of the Canadian Builder, "Which of the Two Intersecting Points is Correct?" I may say that if you reduce one side of the balcony, the pier should be reduced in proportion, and you will always find the top line right as in this case.—J. A. Pilow.

Toronto Housing Company's Prize Competition.

I do not like to interfere with the good work of the Toronto Housing Company, but should like to make a suggestion regarding the Prize Plans on page 12 of The Canadian Builder.

Referring to the first floor plan, the entrance to the house is on the side into a hall. This hall divides the kitchen and dining room. Would it not be better to use the room marked "parlor" for the dining room and cut a door through the partition between these rooms. This would bring the kitchen and dining room together, and the room marked "dining room" could be used as the parlor.

This suggested arrangement would save the housewife many steps and would be in keeping with modern ideas where no servant is kept. In a working-man's home, the wife does all the housework, bringing up children as well. We should therefore plan our workmen's houses to save as many steps as possible.—Reader.

Wm. R. Reed & Co., contractors, of Saskatoon, have commenced business at Yorkton.

Sturgeons, Limited, has been incorporated with a capital of \$50,000, to carry on business as general contractors, with head office at Toronto. The provisional directors are J. S. Lovell, accountant; J. J. Dashwood and Robert Gowans, solicitors' clerks, all of Toronto.

City Construction Company, Limited, has been incorporated with a capital of \$40,000, to carry on a general contracting business with head office at Toronto. The provisional directors are A. G. Robertson, financial agent; Wm. Leslie and Alex. Smith, printers, of Toronto.



A home well planned and well-placed showing the Native Stone Chimney.

Native Stone Fireplace and Chimney as a Decorative Feature

CANADIAN houses are becoming more English in one feature at least—the chimney and the fireplace. The speculative builder has discovered one way of reaching the heart of a prospective buyer through an attractively designed fireplace. It just takes a little imagination to see the warm fire on the hearth, the rug, and the big comfortable davenport

One of the most attractive fireplaces is that of native stone with the accompanying native stone chimney. In an English house of even the most humble character almost every room has its fireplace and Canadians are calling for more fireplaces, some of the older houses being changed to permit them being installed. In the larger houses fireplaces are being installed in the halls and each fireplace, has, of course, its accompanying chimney.

To make the fireplace and chimney attractive, therefore, it is necessary to give considerable thought to their design. In the accompanying illustrations the fireplace and chimney are made of native stone, the boulders being piled up one upon another and plastered together.

The chimney becomes an important feature of the house when attractively designed. English architects and builders have demonstrated that. Canadian builders could make the houses even more attractive by using native stone. In fact, in some parts of Western Canada, it is necessary to use native stone for foundations as well as chimneys. The result has been very satisfactory, the boulders giving a decorative effect that could not be obtained otherwise.



Native stone fireplace makes a room cosy and attractive. The interior of this house is finished in natural wood.

News of the Building Trade

The Sydney Pressed Brick Company is manufacturing what may be described as artificial stone from granulated blast furnace slag and a small percentage of slag cement. The granulated slag is obtained in railway hoppers from the Dominion Iron and Steel Co. Part of the moisture is driven out of the slag in a rotary dryer and the proper proportion of cement is then added. The bricks are 8 3/16 inches by 4 inches by 2 3/16 inches, and are light gray, red and yellow in color.

C. E. Deakin, Limited, has been incorporated, with a capital stock of \$500,000, to carry on business as general contractors and builders, with head office at Montreal. The incorporators are L. A. David, L. J. M. Dugas, barristers, and E. C. Baker, accountant, of Montreal.

Montreal Cut Stone Company, Limited, has been incorporated with a capital stock of \$100,000, to carry on business as quarry masters, stone merchants, road builders, etc., with head office at Montreal. The incorporators are H. J. Elliott, advocate; E. C. Baker, accountant, and G. L. Alexander, advocate, all of Montreal.

The Toronto Housing Company have purchased a 200 acre farm two miles north of Danforth avenue and four miles east of Yonge street, for a little more than \$100,000. It is to be developed into a model garden suburb, and the idea is, if practicable, to give each tenant a quarter of an acre to be used as a market garden.

Mr. S. E. Hart, for the past fifteen years a contractor of cut stone in Winnipeg, died on September 26th, aged 69 years and ten months. Mr. Leonard Hart, a son, who had been engaged with his father for some years, and T. J. Keen, who managed Mr. Hart's business for the past three years, will remain with the business. Mr. Keen will be manager, as in the past. The yards are located at the corner of Hetherington and John streets, Fort Rouge.

Mr. John MacQuarrie, a well-known contractor of Winnipeg, has lately taken a partner in the person of J. L. Naylor. The company has been incorporated and will be known as the MacQuarrie-Naylor Company, Limited. The company is capitalized at \$20,000. John MacQuarrie is president and general manager, and W. A. Campbell, of Winnipeg, is vice-president. Mr. Naylor is secretary-treasurer, and will attend to the financial affairs of the company, while Mr. MacQuarrie will, as before, devote himself to the outside work.

J. B. Smiley, who has been identified with the Pennsylvania Steel Corporation since 1905 and for about three and one-half years in the New York office of the company, has resigned, to take effect November 1st, to become general manager and treasurer of the Builders Supply Company, Limited, Edmonton, Alberta, contracting and contractors' supplies. He is now associated with E. A. James, Winnipeg, president Builders Supply Company, formerly vice-president of the Canadian Northern Railway, and for 21 years general superintendent of the Canadian Pacific Railway, and with Charles May, vice-president of the company, formerly mayor of Edmonton. Mr. Smiley is a civil engineer graduated from the University of Pennsylvania.

Two Prize Concrete Block Buildings

Editorial Correspondence

Herewith are shown two prize winning concrete block buildings in a contest carried on by the Ideal Concrete Block Machinery Co., London, Ont., and

South Bend, Ind. Fig. 1 is an artistic bungalow constructed of stucco on concrete blocks. The following are full particulars in regard size, cost, etc.:

Owner Kenneth K. Bullard, 220 North Second avenue, Maywood, Ill.; architect, Robert B. Seyfarth, Corn Exchange Bank Building, Chicago, Ill.; contractors, Sheldon Brothers, Maywood, Ill.; block layer, John Lewald; frontage, 30 feet; depth, 46 feet 8 inches; 3,-



Fig. 1. Artistic bungalow, constructed of stucco and concrete blocks.

500 8 x 8 x 16-inch stucco blocks used. Bungalow has concrete Ideal block foundations, contains five rooms, has hot water heat, is dry and sanitary. Two coats of stucco were applied to the blocks and given a smooth finish; cost of block work, \$1,550.00; cost of building, complete, \$6,500.00.

Sydnahan Club, Owen Sound, Ont.

Fig. 2 shows a building erected in Owen Sound, Ont., for the Sydnahan Club by Jones & Clark. The following are the details of construction and cost:

Owner, Sydnahan Club, Owen Sound, Ont.; archi-



Fig. 2. - A club house built of concrete blocks.

itects, Forrester & Clark, Owen Sound, Ont.; contractors, Jones & Clark, Owen Sound, Ont.; frontage, 44 feet; depth, 44 feet; 12,800 8 x 12 x 16-inch and 8 x 10 x 16-inch rock and vertically tooled faced blocks used. Building has Ideal block foundation. Ten rooms and hot water heat. Cost of block work, \$2,750.00; cost of building, complete, \$8,800.00.



Good effect of seat extending from one window to another, with shelving above in the corner.

THE window seat is an excellent opportunity for introducing a decorative and convenient feature into a room, especially when it is successfully incorporated with the architectural lines of the house, but it is of very great importance to take into careful consideration the placing of window seats when the plans of a house are being made, as their success depends a good deal on their construction.

Perhaps the most suitable room for a window seat is the living-room; it seems to give an inviting and cosy appearance to the interior, and a suggestion of informality that makes itself felt. The dining-room, too, has a claim, for, on occasions when the dining-room is being used for a tea, the extra seating room is invaluable; then the seat can always be utilized for a display of blooming house plants and bulbs, for in a room where the family gathers at least three times a day a window pageant seems particularly appropriate.

Have the Seats Wide and Low

When planning for window seats do not have them too high or too narrow, and as they usually have a mattress-seat, allowance must be made for the additional height which this will give. Most houses have not enough room for stowing things away and window seats are hiding places for this purpose, so it seems advisable to make them like a box.

Windows and Window Seats

By M. T. Priestman
in Keith's Magazine

A window seat is the most decorative when it is placed under one window and allowed to turn the corner and extend to another window. One of the illustrations is a good example of this.

The design of the settle-ends adds greatly to its appearance with the wood-work running up against the wall, and the shelving above for books is unique.

Sometimes a window seat effect can be given by a divan extending from the corner of the room and beneath the window. In a bedroom there is always a scarcity of chairs and extra seating room secured by means of a window seat, is worth planning for, especially when it can be combined with a roomy receptacle for cloths.



Cosy effect given by corner window seat.

Houses of the Plymouth Cordage Company's Employees

The Plymouth Cordage Company, Welland, have in connection with their factory a system of looking after the welfare of all employees. A number of the features of the welfare work are: The annual fair and exhibition held by the employees; the houses which the company have built and rent to employees at a low figure and the dining hall at the factory where employees may obtain a hot dinner at a very reasonable price. There are also an athletic field, athletic building, tennis courts, social hall, etc.

The company erected a settlement of fifty houses. An idea of the design of the houses may be obtained from the accompanying illustration. The houses are designed for two families and comprise five rooms and bath, six rooms and bath, and seven rooms and bath. The houses are all furnished with hardwood floors and modern, open plumbing.

The houses are situated on lots from 100 to 150 feet deep and 50 feet frontage. This allows ample room for flower beds, gardens or poultry yards as desired by the tenant.

Concrete Foundations

By Edward Dreier

The value of concrete as foundation material depends absolutely on a few easily understood essentials, such as:—

- (a) First-class cement.
- (b) Clean broken stone of proper size, with sharp edges
- (c) Clean, sharp sand.
- (d) Proper proportion of aggregates.
- (e) Uniform mixture.

Add to these an imperative prohibition against doing concrete work in freezing weather, and if the above conditions are all observed, one cannot go far wrong.

For ordinary foundations of the better class where Portland cement is used, what is known as the 1:3:5 mixture will be found to give entire satisfaction. In cement mixtures, the formulae are arranged in the following manner: Cement, sand, crushed rock; the ratio generally used is one of bulk of measure rather than of weight, as the aggregates can then be easily handled and quantities computed by wheelbarrow loads or shovelful and avoid the extra labor of weighing each

batch. The standard 1:3:5 formula properly would read as follows:

Parts by measure—Portland cement, 1; sand, 3; broken stone, 5.

The broken stone in the above formula should be cubical in shape, with sharp corners and of such size that 75 per cent. of it will pass through a 1½ inch ring. It should be free from dirt and of sufficient density to guarantee that it will not crumble under the action of frost.

The sand used should be clean, sharp and free from loam or dirt. Gravel or sand which has been exposed to attrition until the corners are rounded are not so suitable for concrete as the sharper kinds.

In measuring the aggregates for mixing according to the above formula, we would, first, put on the board three barrowsful of sand; this should be well spread over the surface of the boards and one barrow of cement spread over it; the mass is now thoroughly mixed by shoveling with a turning motion of the shovel, throwing the mass from the corners to the centre of the board in a heap. The mass is then turned again by shoveling from the centre outward, leaving it in its original form. The mixture is now raked into bowl shape, and enough water added to mix the whole into a thin mortar, turning the mixture twice as in the original mixing. Now add five barrowsful of crushed stone, and again turn the mixture twice as before; the result of this mixture will be ordinarily not subjected to severe strain. In the case of floors for coal bins, etc., it will be well to adhere strictly to the 1:3:5 mixture and ram it hard, giving plenty of time to set before exposing it to use. The quality of all concrete will be improved by frequent wetting of all exposed surfaces until it is thoroughly set.

The Mixing Board.

It will be at matter of economy in point of time and results secured, to provide a good mixing board on which the aggregates may be properly mixed. For the ordinary job where four shovelers are used a board ten feet square will be found sufficiently large. This may be made of ordinary sheathing boards cleated together with cross strips of 1 inch by 6 inches placed 3 feet apart. Such boards are sometimes made with a 4-inch strip nailed all round flatwise on the top to prevent running off of the water. Where they are made for permanent use it is better to use matched lumber in their construction



Type of house built by the Plymouth Cordage Co., Welland, and rented to employees at a low rental.



A pretentious-looking red brick veneered house.

Red Brick Veneered House to Cost \$5,500

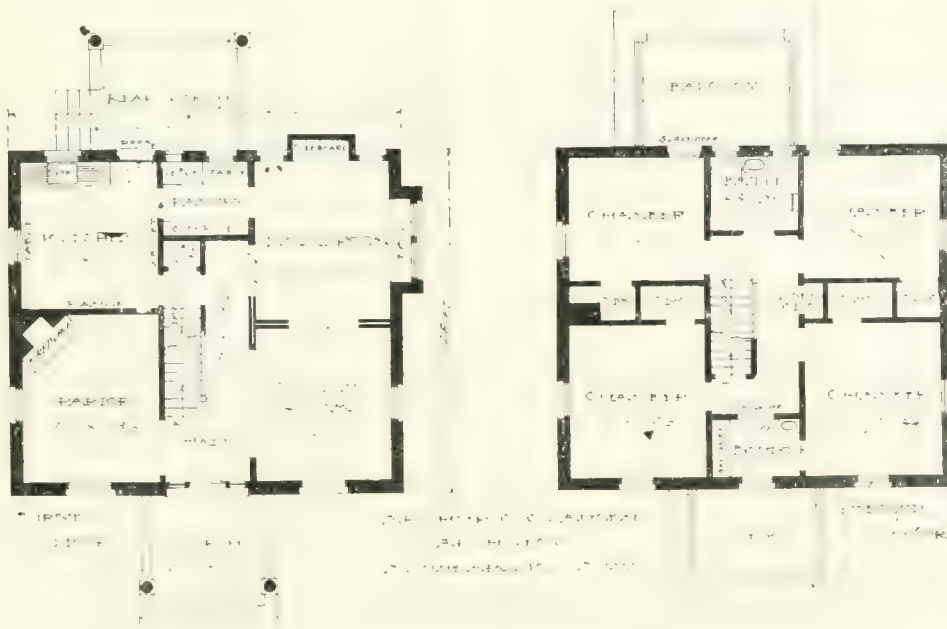
Architect :
Arthur C. Clausen

HERE we have a type of brick house, one that is not as pretentious as the first study. There is more frame trim. The roof is pitched into a steep gable and contains one large central dormer.

The foundation is laid up in native range rock with a stone water table. The window sills are stone and the plainness of the brick wall is relieved at the corners by quoins. Under the cornice brackets a broad frieze is carried clear around the house.

The two front rooms are separated from the

central hall by plain cased openings. There is one large single sliding door closing off the dining room from hall and double sliding doors dividing dining room from sitting room. It is a compact plan, being 28 x 32 feet on the ground, and provides on the second floor four bedrooms and bath, with opportunity for two additional chambers in the third story. The face brick is a red Colonial brick, and with hot water heating plant this house cost at the time it was built \$5,500. — *Keith's Magazine.*



Plans of the first and second floors.

Canadian National Association of Builders' Exchanges

City.	Secretary and Address.
Montreal—R. L. Werry, Sec., 263 St. James Street.	
Toronto—P. L. Fraser, Sec., 2 Berti Street	
Quebec—A. Cote, Sec., 23 Rue St. Jean.	
Ottawa—W. Hastings, Sec., 22 Metcalf Street.	
London—Geo. S. Gould, Sec., Bank of Nova Scotia Building.	
St. Thomas—E. O. Penwarden, Sec., Dowler Block.	
Kingston—E. R. Beckwith, C.E., 292 Earl Street.	
Sault Ste. Marie—MacPhail & Wright Cons. Co., Ltd., P.O. Box 835.	
Brantford—A. J. Cromar, Sec., 103½ Dalhousie St., P.O. Box 212.	
Windsor—Geo. A. Freeman, 44 Campbell Avenue.	
Hamilton—A. Heatley, Sec., 7 East Avenue South.	
Stratford—J. L. Young, Contractor.	
St. John, N.B.—Chas. F. Stevens, Builders' Exchange.	
Halifax, N.S.—H. Roper, care S. M. Brookfield, Ltd., 58 Granville Street.	
Winnipeg, Man.—A. M. Rose, Sec., Portage Avenue and Hargrave Street.	
Regina, Sask.—Geo. Powell, Sec., Builders' Exchange.	
Calgary, Alta.—W. W. Hay, Secretary, Board of Trade Building.	
Edmonton, Alta.—A. O. Wetmore, Sec., McDougall Court.	
Medicine Hat, Alta.—J. D. Everard, Sec., Builders' Exchange.	
Lethbridge, Alta.—E. Power, Sec., Acadia Block.	
Vancouver, B.C.—Builders' Exchange, 342 Pender Street.	
Victoria, B.C.—Chancery Chambers.	

News of Builders' Exchanges

Mr. A. M. Rose, secretary of the Winnipeg Builders' Exchange, and Mr. W. T. Houston, of the Dauphin, Man., Builders' Exchange, attended the recent International Conferences of Secretaries at Detroit. At this convention a general discussion on "Uniform Contracts" was led by T. L. Fraser, secretary of the Builders' Exchange of Toronto, who brought out the statement that over one hundred thousand copies of the contracts were sold last year. While the contract was not considered perfect, it was nevertheless regarded as a standard blank which could be adapted to general uses with good results.

* * *

A Builders' Exchange for St. Catharines was organized at a meeting of the contractors in A. O. U. W. hall recently. The officers elected are:

President—Chas. Chaoman.

Vice-President—John Davis.

Secretary—Thomas Mesler.

Treasurer—Wm. Leach.

Executive Committee—H. P. Nicholson, John Peart, F. W. Martin, James Dakers and John Davis.

Auditors—John W. Carl and Frank Hoar.

Arrangements are being made for a monster banquet at an early date.

Convention of Painters' and Decorators' Association

The fifth annual convention of the Master Painters' and Decorators' Association of Western Canada will be held at Winnipeg during February, 1913. Arrangements are already being made and new features of an instructive nature will be introduced. The competition panel plan, which proved so successful at the last convention will be a feature of the next convention. Handsome money prizes will be offered. The convention dates will be fixed in order that J. W. Morley may attend following his attendance at the international convention of Master Painters and Decorators at Denver, of which body he is president. A. Malcolm, Ham-

iota, is president and William C. Clark, 561 Maryland street, Winnipeg, is secretary of the M. P. and D. Association of Western Canada.

Demand for Cement in Russia

At the sixth Congress of the International Association for Testing Materials, held in New York, His Excellency, N. Bebelubsky, one of the most distinguished engineers of Russia and the newly elected President of the Association, gave considerable information, in general conversation at the Congress, as to the conditions of the cement market in Russia. He said that the building conditions in Russia were so excellent and the demand for all building materials so great, that the cement manufacturers have not been able to keep up the supply at all and that in many cases work was being held up for lack of cement, and that there was a large field for the construction of new cement works and the development of new concrete industries in Russia. He expressed the general feeling that with the new harbor work on the Black Sea and on the Baltic now under contemplation, the Government would be a large consumer, and that all through Russia the demand for cement was beginning to awaken just as it did in this country ten to fifteen years ago.

Montreal By-Law re Motion Picture Theatres

Mr. Chausse, building inspector of Montreal, has prepared a by-law on the subject of motion picture theatres. Under this enactment, buildings with a gallery or galleries will have to be fireproof, and the compartment for the apparatus will also have to be of fireproof material, which may include brick, tile, concrete, galvanized iron or their equivalent.

New Manitoba Agricultural College, St. Vital, Man.

What is said to be the largest building project in the West this year is the new Manitoba Agricultural College at St. Vital, Man., near Winnipeg. The total area is 1,100 acres, of which 30 acres will be covered with buildings. Contracts let for buildings now under construction amount to \$2,500,000, and the total cost of the institution when complete will be about \$5,000,000.

The Administration Building is 170 by 98 feet with basement, three stories and tower. The dormitory is 550 by 50 feet, four stories high. The dormitory required 4,000 yards of concrete, 2,800 pieces of sash, and 7,000,000 brick. It will accommodate 500 students.

Power plant, Chemistry Building and Biological Building are also being built. The buildings are of uniform construction, the outside walls being of mottled pressed brick from Hebron, N.D., the stone is from Tyndall, Man., and the roofs of Spanish tile. The common brick was supplied by T. Kelly & Sons. The architect was the late Thomas Hooper and the present Provincial Architect, Victor W. Horwood.

The general contractors for the Administration Building were the Carter-Hall-Aldinger Co., and for the Dormitory, Horticulture and Chemistry Buildings were Côté & Benoit. The roofing were supplied by the Winnipeg Ceiling and Roofing Co.

Messrs. H. J. Elliott, E. C. Baker and G. L. Alexander are named as the incorporators of the Montreal Cut Stone Co., Limited, Montreal, capitalized at \$100,000.

Montreal's Building Permits

The annual report of Mr. Alcide Chausse, chief building inspector and city architect, completed recently, says that the building in Montreal for 1912 will probably exceed that of last year by two million dollars. The total last year was \$18,004,952. This included \$14,589,762 in building permits, \$2,000,000 by the Harbor Commission, \$150,000 for Longue Pointe Ward, and \$258,000 for Cote des Neiges Ward.

Openings for Brick Plants

There are evidently openings in Canada for brick plants judging by the following two instances which illustrate the demand for building material in Canada.

The Empress Hotel, Vancouver, are constructing an eight-storey addition to the Empress Hotel. The brick for the exterior were brought from Coffeyville, Kansas, U.S., a distance of 3,000 miles.

Another case is that of the \$5,000,000 Manitoba Agricultural College, St. Vital, Man., near Winnipeg. There were 7,000,000 brick used in the Dormitory Building alone. These pressed bricks for the exterior were supplied by the Hebron Fire and Pressed Brick Co., Hebron, N.D., U.S. There are large clay deposits in the West and capital could be advantageously used in their development to supply the growing needs of the West.

More Cement Plants for the West

Canada is growing out of its swaddling clothes as far as building construction is concerned. For twenty-two cities in the West the increased building permits for September, 1912, over the same month last year were \$5,220,336, or practically 65 per cent. Last spring there was difficulty in obtaining building supplies, including cement. In order to guard against this difficulty next year, General Manager Jones stated that the Canada Cement Company had in view the expenditure of several million dollars in the extension of their

chain of mills throughout the West. To take care of the growing needs of the West manufacturers will find it advantageous to establish branch factories if they are to hold Western business.

Giving Concrete a Polished, Glassy Surface

One way to get a smooth surface on concrete is to get as close as possible to the desired result when the concrete is first cast. This is accomplished by using a very smooth surface on which to cast the concrete surfaces which are to be smooth. Glass may be used, or metal which has been smoothly and carefully enameled.

Another way is to depend upon the treatment which is to be given the surface after the casting has been made. In this you must use an aggregate which will take a polish and you must have a well-graded mixture so that there will be a very small percentage of Portland cement on the surface. The aggregate which is to take the polish must be kept on the surface. The polishing is then done just as with any other stone, and of course the color depends upon the color of the aggregate. If you want a very white material, use White Portland cement, at least for the surface mixture. There may be a backing in which ordinary gray cement is used.—Concrete-Cement Age.

How I Keep Busy in Winter

We wish to secure a number of short, concise stories of how Canadian builders keep busy in the winter time. For each letter accepted for publication we will pay the sum of One Dollar—the price of your subscription to The Canadian Builder. Let us hear from you to-day. Address letters to the Editor of

The Canadian Builder, 408 McKinnon Bldg., Toronto

An attractive exhibit of brick and builders supplies at Windsor, Ont., Fair, by the Cadwell Sand and Gravel Co., Limited.



The Canadian Builder and Carpenter

A Practical Paper Devoted to all Branches of the
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Advertising rates on application.

Vol. 2

TORONTO, NOVEMBER, 1912

No. 11

What Town Planning Means

Town planning has been brought to such a basis that it appeals to the practical man. It means more than "city beautifying" for it concerns itself with the circulation of traffic, the relief of congestion, the improvement of housing conditions and the securing of sites for parks and playgrounds while the land is comparatively low in price.

The meaning of town planning is shown by a booklet issued by the Town Planning Committee of Winnipeg: "No slums. No sweated labor. Equal opportunity. Justice not charity. Prevention rather than cure." The programme of this committee includes a campaign of education of public opinion, the study of conditions, causes and remedies and actual work in an endeavor to remedy specific conditions.

* * *

The work to be dealt with by this committee include the Housing Problem, Factory Problem and Drawing up of a City Plan.

(a) **The Housing Problem.**—The improvement of housing conditions in the present congested districts by influencing the opinion of landlords and the erection of suitable tenements and cottages at the lowest possible rental.

The control and restriction of such congested districts and the general slum territory.

The encouragement of rapid transportation to the suburbs, to relieve and prevent the formation of congested districts and to encourage any tendency of the working class to move into the outlying districts. The formation of garden suburbs.

To co-operate with the authorities in the enforcement of present health laws, and, furthermore, to urge the adoption of better sanitary regulations.

Assisting the authorities in combating overcrowding of houses in congested districts.

The development of open spaces and play grounds.

The enforcement of the best regulations in regard to building construction.

* * *

(b) **Factory Problem.**—The enforcement of laws in regard to health conditions in factories.

The prevention of sweated labor.

The prevention of child labor.

The encouragement of suitable large factory buildings for the joint accommodation of a number of smaller industries, thus providing the best health conditions for labor.

* * *

(c) **The drawing up of such plan of the city as will provide for future development, such plan to take cognizance of some of the following features:**

To provide main arteries for traffic from the outskirts to the centre of the city.

To restrict and regulate the size of lots and new subdivisions.

The co-operation with municipalities adjoining the city towards these ends, more particularly with those portions of municipalities which the city may be expected to include at some future time.

In such a plan cognizance should be taken of all possible railway entrances and the general plan of the city should make it clear that railways will only be allowed to enter at certain points.

The building of a main boulevard around the city connecting the outside park system.

Such a plan should endeavor to arrange for the location of a factory district or groups of factory districts.

The adoption of many other ideas that are provided for on the English Town Planning Act and on the Continent of Europe, where the same are suitable for local conditions.

* * *

All the above is distinctly a business proposition, as better housing facilities, reasonable wages, improved health conditions will mean more efficient labor and will enable the city to avoid the expenditure of enormous sums of money in future to remedy conditions which will surely arise under our present haphazard system. Moreover, there is a moral side to these problems which it behooves business men, to say nothing of church men and philanthropists to consider. It is much better to prevent a person from getting sick than to spend money curing him. Prevention rather than cure, justice rather than charity, should be the principle, stimulating those who will become interested in this movement.

Payment for Alteration of Plans

According to a report, Mr. Francis C. Sullivan, architect, Ottawa, has been accused of fraud by the Chairman of the Separate School Board, Ottawa, because he charged for original and altered working drawings of a proposed new school. As both of these had been ordered, he, therefore, had a right to be paid for them. The workman is worthy of his hire. Alterations to plans, like alterations to buildings, made under instructions are just debts for which the workman must receive compensation without any stigma being attached to his name. It is understood that Mr. Sullivan will ventilate his case in Court and that a charge of libel has been filed against the Chairman.

The Toronto Housing Company's plans to erect 100 houses on Sparkhall and Bain Avenues have received a setback, the Toronto Works Committee recommending that the proposal to divert these avenues for this purpose be not allowed. It is hoped that the Toronto City Council will recognize the work of the Toronto Housing Company and give the Toronto Housing Company every assistance in the erection of these needed attractive and sanitary houses for workingmen.

Brick Work, Concrete Work and Plastering

Application of Battering Lines and Plumb Rules

By Owen B. Maginnis

Ordinary tools in building and engineering work are always within the scope of mechanical application, although extraordinary or unusual tools are not. Therefore, in this article it will be my purpose to treat of one of the latter class—that of the battering rule. Take, for example, a chimney or smoke stack to be built, say 50 feet in height, either round or square, in cross section and diminishing or battering from eight feet in width or diameter at the base to four feet at the top. The question naturally arises how will it be possible to build this stack so as to work out exactly to the dimensions given. The answer is by the use of the battering plumb rule shown to the left at the base of the brick smoke stack or chimney illustrated in Fig. 1. Assuming that many mechanics are not familiar with the method of making this tool we offer the following suggestions.

Primarily the battering plumb rule might in practical work be compared to a simple arithmetical problem in proportion, thus: The chimney stack is 50 feet high and diminishes or tapers on one side 2 feet. If the side of 50 feet decreases 2 feet in that distance, how much will it decrease in 4 feet, which we will assume

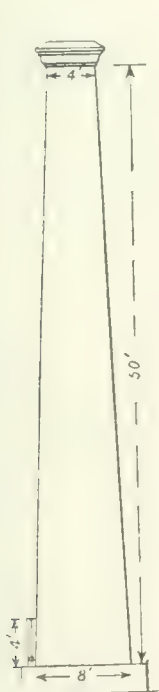


Fig. 1. Showing use of battering plumb rule at base of brick smoke stack or chimney.

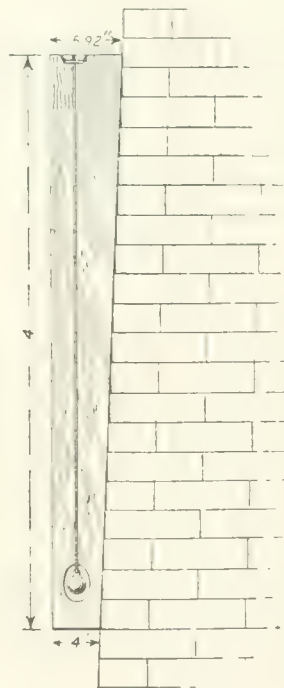


Fig. 2. Battered plumb rule applied to brick work and stack.

to be the working length of the rule to be convenient for handling.

Reducing 4 feet to inches gives 48, which multiplied by 24 inches, the amount the chimney decreases in diameter, and divided by 600, the height in inches of the chimney, gives 1.92 inches for the 4-ft. length of rule.

To find the plumb rule batter for 100 feet in height, divide 1.92 by 2, which gives .96 of an inch.

Continuing this operation for heights of 150, 200, 250 and 300 feet gives as results .64, .48, .384 and .32 inches respectively.

Assuming that these simple calculations will be readily understood lesser subdivisions can be taken either by decimals or fractions as represented in Fig. 2 of the sketches.

Another practical way of ascertaining the amount

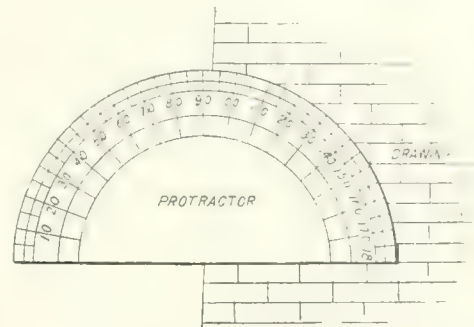


Fig. 3.—Determining the angle or degree of batter by the protractor.

of batter is that shown in Fig. 3, which for simplicity cannot probably be excelled. The method is to take a horn or brass protractor, usually found in a set of drawing instruments, and place it on the plans, keeping the diameter line on any horizontal joint of the elevation. Then by multiplying the radius of the semi-circle by the length of the plumb rule the full decrease in taper will be found.

Suppose, for example, the stack diminishes 1 degree and that the radius of the protractor is 2 inches, it will diminish 24 times 2 inches in 4 feet, or 48 inches. Again, a steel square graduated to 64ths or 32nds will serve the same purpose, always maintaining extreme accuracy at the measurement points. It is best, however, to have the architect or engineer verify the slope or batter as he designs the stack. Coming now to the actual making of these rules as tools, it will be observed in Fig. 2 that there is very little difference in the tool here represented and the ordinary plumb rule with the exception that it is wider at the top than at the bottom, this being so in order to obtain the proportion of batter.

Here we might introduce the matter of curved vertical structures. For example, such a rule as that described may require to be slightly hollow on its working edge so as to form a slight entasis or curvature of the constructed mass of brick work, concrete or whatever the material, so this hollowness must be very accurately following in doing the actual work.

When the batter is excessive—approximately 60 deg. or more—a good practice is to build up each rule in the manner represented in Fig. 4 of three or more pieces of white pine, properly halved and screwed together by the carpenter so as to be firm, stable and unalterable. At the left is shown the line and plumb bob made as in the usual tools; the pieces gauged and the tool absolutely accurate. This rule should not be too heavy and can be applied with both hands and must be always true and out of wind.

Angles and intersections in this kind of work require must definite laying out and methodical meas-

ning. Witness Fig. 5 where one batter and one curved wall of concrete join together at an angle of 45 deg., as represented by G H on the plan. The height of the wall A B is 22 feet, as shown by the section B A C. The slope or batter of one part is 2 feet and the projection of the curve of the other is also 2 feet, being an arc of a circle struck from a centre not in the drawing. These proportions have been somewhat exaggerated in the engraving so as to better illustrate the method to be explained.

To gain the angle and curve of intersection between these two walls in the simplest manner, first divide the altitude A D into any number of equal parts as ten, and from the points of division draw horizontal lines as 1-a, 2-b, 3-c, etc. From their intersections with the curve, a, b, c, etc., carry lines down through the plan indefinitely.

Construct also a section of the battered wall as shown by D F E, and divide its altitude D F into ten equal parts as before, carrying lines at right angles to D F to cut the straight line D E, and from these points of intersection carry lines parallel to D F into the plan to cut lines of corresponding letter dropped from the section B A C, as shown by the curved line from G to H, which will give the true plan of the miter. From each of the intersections in the plan erect lines at right angles to the straight line G H, making the line from G equal in height to A B or E D as shown by G J, and divide it also into ten equal spaces. From the points so obtained draw lines at right angles to G. J to cut lines of corresponding number brought up from the intersections previously obtained on the plan as shown by a', b', c', etc. Then the curved line H J so obtained will represent a section on the curved line G H of the plan, from which it will appear that the line H J deviates from a plane an amount equal to the deviation of the curve G H from the straight line G H.—Building Age.

Cracked Plaster Ceilings and the Remedy

By V. Dorian, in *American Carpenter and Builder*

Among the defects of minor importance associated with the completion of a new building, it would be difficult to name any which cause more dissatisfaction and unpleasantness than unsightly cracks in plaster ceilings. These usually make their appearance when the building is ready for occupation, and continue to appear for a considerable time in the most provoking and defiant manner. Plasterers and their employers are anathematized by the architect and client, and in many cases the matter remains unsettled until the cracks have been cut out, refilled with a special material and the whole ceiling redecorated. This process, of course, entails considerable inconvenience to the occupant of the premises, as well as expense to those responsible for the work.

No Trouble With Gypsum Plaster.

I had better here explain that I am not now considering the numerous patent plasters on the market which have been designed to supersede the old-fashioned lime

and hair mortar. I readily admit that the use of these reduces the above defects to a minimum.

Bearing in mind, therefore, this important fact, I will confine my remarks to the ordinary lime and hair mortar, this being the material in general use throughout the country. Apart from the above defects it is generally satisfactory, being healthy, durable, and economical. Its use dates back to the oldest civilization, and it is, therefore, time-honored, and has withstood the test of time.

During a connection with the plastering trade extending over a period of sixteen years, I have been associated with many interesting experiments to find the cause, and, perhaps, the remedy for cracked ceilings. In many cases considerable expense has been incurred by the contractors in order to assist the architect to solve the problem. The result of the most elaborate experiments impressed me as only deepening the mystery, for some of the ceilings on which most money was spent turned out the worst of all. To prove that enterprise and ingenuity were not lacking, I will give particulars of the process adopted in the principal cases.

But Unwashed Sand Was Used.

Experiment No. 1.—An old ceiling was removed, the joists, being perfectly sound, remaining. Lathed with best quality lath, joints broken every two feet, and butted. Hand-made mortar, consisting of lime, sand, and best quality hair for first coat, scratched to form key and allowed to stand until "white" dry. Afterwards floated carefully, and when semi-dry skimmed in usual way.

No. 2.—Joists, lathing, material, and first coat as before, but second coat put on when the first coat was changing color, and not quite "white" dry. Skimmed following day.

Experiments 3 and 4.—New joists and new building material as before, and the plasterers adopting methods 1 and 2.

No. 5.—Same as 3 and 4, excepting that the mortar passed through a mortar mill.

No. 6.—New joists, best lathing, and a bag of cement

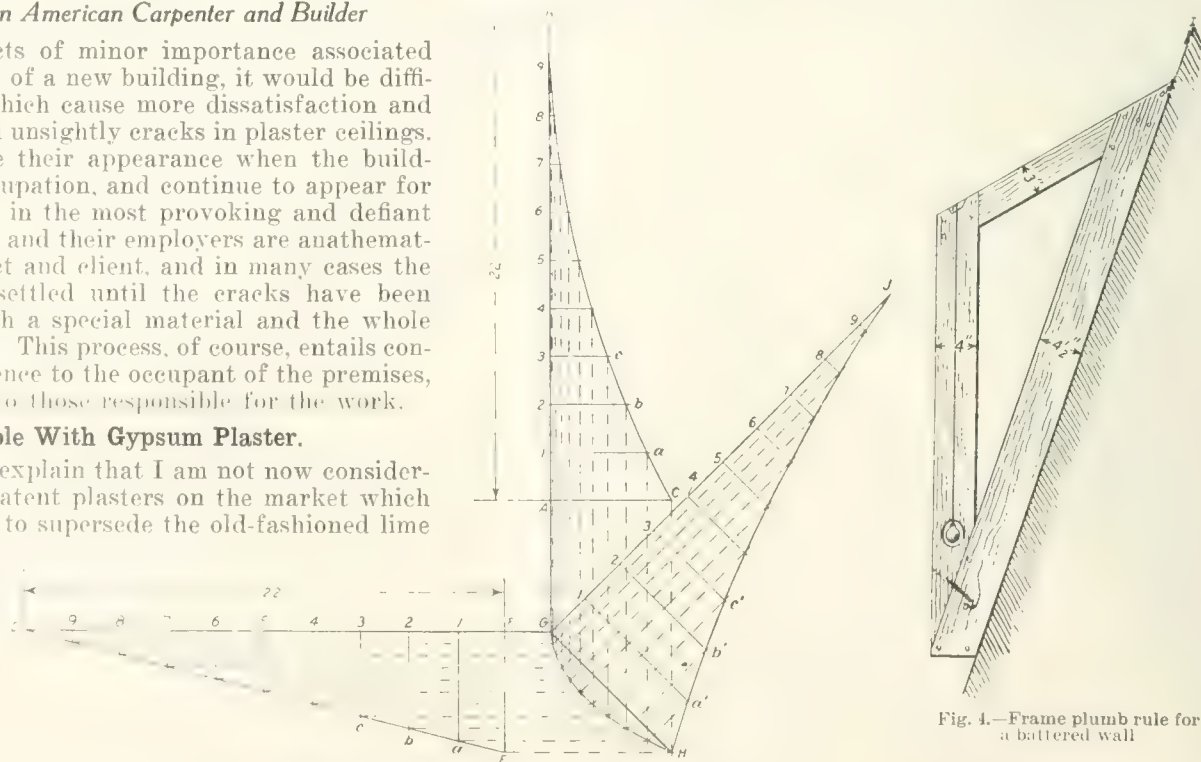


Fig. 5. Battered, straight and curved intersections.

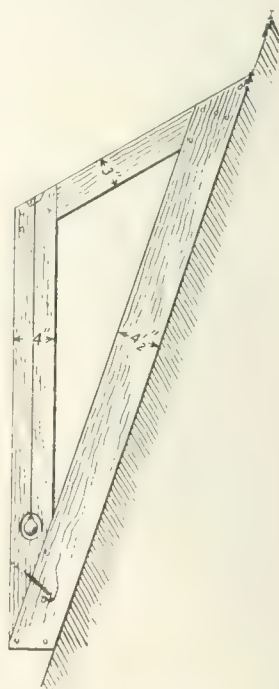


Fig. 4.—Frame plumb rule for a battered wall

added to the mortar in one ceiling containing sixteen superficial yards.

In all these experiments the sand used, which is of course, the principal material in regard to bulk, was ordinarily pit sand unwashed.

In every instance the ceilings cracked, the way of the joists, the way of the laths, and diagonally.

And now I will relate the most interesting case of all. This was not an experiment, but simply transpired in the ordinary course of business.

A few years ago I settled in a district where sand is not available. All building and plastering mortar consists of ashes and lime ground in a mortar mill. The ceiling mortar is in the proportion of about three of ashes to one of lime, that for walls about four or five to one. Plasterers in many districts would be surprised to learn that hair is practically an unknown quantity in these places. Experience has proved to me that it is not absolutely necessary, though I still believe it is somewhat desirable. I, of course, argued in favor of using it, but finally gave way before the arguments of the builders and plasterers belonging to the locality.

The result was as follows: Twelve houses were plastered as above, no hair being used. The laths were cheapest quality sawn, lapped at joints, and unbroken for the whole length of room. Joists were 8 by 2 inches. The plastering was let piecework. The ceilings, walls, and studded partitions were given one coat about $\frac{5}{8}$ -inch thick, rubbed up with float and skimmed when quite firm, but not completely "white" dry. No plaster of paris was used, but the plasterers were allowed "free hand."

I examined these ceilings about six months after occupation, and found them practically free from cracks. I examined the key and found it firm and unbroken. In every house the ceilings and partitions were infinitely better than all those mentioned above, though these were carried out under strict supervision.

I am inclined to believe that the omission of hair will be felt at a later date. I left the houses with the impression that the key could not possibly stand the same strain as those where good, long hair is used, and I would not care to expose them to any severe test. Otherwise they appeared eminently satisfactory.

Conclusions.

By this process of reasoning I arrive at the conclusion that the cracked ceilings are chiefly due to the free use of loaming sand. Only in rare and isolated cases is it perfectly clean and all grit. I know the plasterers' intense dislike of sharp sand, and their passion for the kind as much like soil as possible, for in their own expressive phraseology, it "spreads like butter." Work can be carried out with greater ease and rapidity when the inferior kind is used. Not to seem unfair to them, I allow that unless plenty of lime is used plastering with sharp grit sand is most laborious, and a man must work very hard indeed to show good results. It must also be remembered that where clean grit sand is not easily procurable, the same can only be obtained at considerable cost; it must either be imported or local sand must be washed. This can only be done where a good price is paid for the work.

To obtain the best results at the cheapest price in districts where sand is costly, I would advocate the use of good, clean ashes in the proportion of two or three to one of lime, with clean, long hair added, after removing mortar from mill, and worked in with a rake. I have known cases where the hair has been thrown into the mill a few minutes before the grinding is completed, but it is obvious that it must be considerably broken by the grinding process, and this being so, the object for which it is used is thereby to some extent defeated. It

is, however, a simple matter to learn the best way of mixing it; a few handfuls thrown into a pan will be a sufficient test.

Domestic ashes and flue dust are more objectionable than cheap sand, and should, therefore, never be used. Those supplied by railway companies, colliery companies or other large works give excellent results.

With this material, as with all lime and hair mortar, it is essential that a good key should be allowed in all lathing. A case is mentioned above where the laths were lapped at joints, and though this is very common on cottages, it is not good work.

Waterproofing Concrete

At the sixth triennial Congress of the International Association of Testing Materials, New York, A. Gritter gave the following method for waterproofing concrete.

By fluorating, by mixing with tar, and by mixing with soda and potash soaps. He obtained the following results: Fluorating yields waterproof concrete, but the process requires much work and time. An 8 per cent. solution of potash soap yields a waterproof concrete, completely satisfactory in point of impermeability.

Covering Capacity of Calcimine

One pounds of dry calcimine will cover, when mixed, approximately as follows: Smooth painted boards, 60 to 80 square feet; smooth unpainted boards, 50 to 75 square feet; round unpainted boards, 25 to 40 square feet; soft unpainted bricks, 25 to 40 square feet; hard unfinished bricks, 40 to 65 square feet; stone, 25 to 40 square feet. Some shop records, carefully kept, show that one gallon of calcimine will cover 270 square feet on average hard plaster walls, 180 square feet on bricks, and 225 square feet on wood. It was also shown that an average workman, using a 5-inch calcimine brush, coated in one hour 22 square yards of rough wall; 38 square yards smooth wall; 20 square yards of brick wall; flat surface, 40 square yards; ceiling, from step ladder, 25 square yards.—Keith's Magazine.

Using Concrete Successfully in Winter

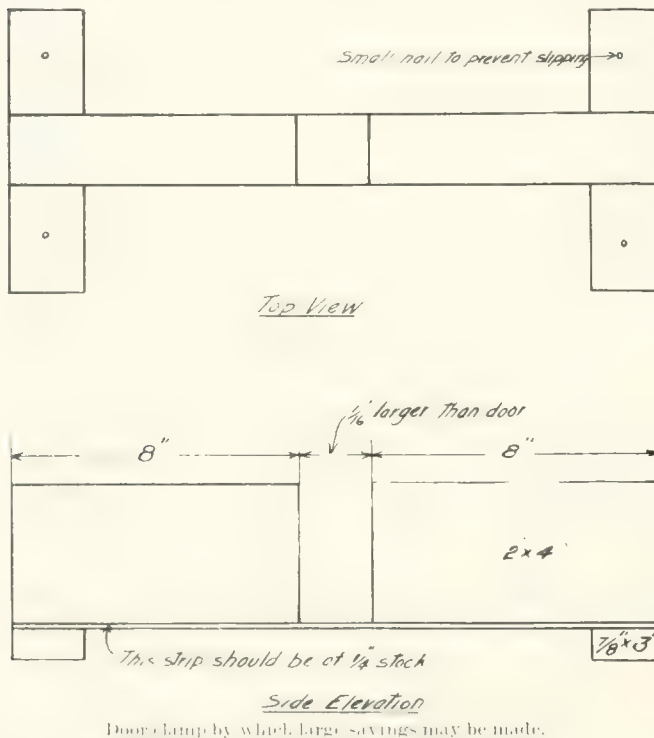
The freeing of concrete is a subject that would be in danger of becoming hackneyed were it not that each winter brings justification for its repetition in the form of damaged work or of failed structures, says the Engineering Record. The use of concrete in freezing weather is now so common and with proper precautions is attended with such excellent results that there is a temptation to neglect the safeguards. For this reason the action of several cement companies and of dealers in concrete equipment in using their advertising space and sending out instructions to emphasize the necessary precautions should be highly commended. But instead of only a few conducting this educational work, all the cement manufacturers and dealers and the concrete equipment houses should use their efforts to spread the knowledge of the dangers and of the nature of the safeguards. In building work the municipal inspectors should be able to prevent improper practice. Unfortunately the people easiest to reach, that is, the large construction companies and public and private owners having adequate engineering and inspection forces, are not likely to be the serious offenders. The small contractor and the small user is generally less awake to the dangers, and special efforts should therefore be made by suitable placards and bulletins to educate the small dealer in cement and his customers.

Carpentry and Woodworking

Door Clamp

By George W. Carter

The door clamp shown in the sketch is very useful for fitting doors. It holds the door upright and rigid. The main thing in making the clamp is to see that you have a thin strip so that when the door is between the 2 x 4 pieces, the weight of the door forces the block of 2 x 4 tight to the side of the rails and holds firmly.



This clamp is very easy to carry about and very simple to make. A big saving in labor on any job may be made with this device and especially on large buildings.

Care of Oilstones

By C. F. Gillette*

There are three objects to be attained in using and caring for an oilstone: First—to retain the original life and sharpness of its grit; second—to keep its surface flat and even; third—to prevent its glazing.

To retain the original freshness of a stone, it should be kept clean and moist. To let an oilstone remain dry for a long time or expose it to the air tends to harden it. A new stone should be soaked in oil for several days before using. All India and Crystolon stones are oil-filled by a patented process before leaving the factory, which insures a moist, oily, sharpening surface with the use of only a small quantity of oil, and eliminates a very disagreeable operation.

To keep the surface of an oilstone flat and even merely requires care in using. Tools should be sharpened on the edge of the stone, as well as in the middle to prevent wearing a trough-shaped depression. It is

*Of the Norton Co., Worcester, Mass.

impossible to prevent a stone becoming slightly hollowed with long usage, but this can be remedied by grinding the stone on the side of a grindstone or by rubbing it down with an abrasive brick.

To prevent an oilstone glazing, the user must first understand what causes a stone to glaze. This can best be explained by showing why oil and water are used on sharpening stones, and how they should be used.

The word "Oilstone" has come to be applied to all stones used for sharpening mechanics' tools, from the fact that it is necessary to use oil on most of them for two purposes; first, to prevent the stone from heating the tool, which draws its temper and ruins the best tool instantly; second, to keep the particles of steel ground off the tool from entering the pores of the stone, which would soon fill them up producing a glazed surface.

The Use of Water.

Most coarse-grained and all soft stones can be used successfully with water, although they must be generally termed "Oilstones." On such stones, water should be used plentifully to carry off the powder rubbed up by the tool. Most water-stones are quick cutting and leave a coarse edge, but a much finer edge can be procured upon the same stone by using just enough water or oil to rub up a paste. This paste when kept on the stone will give a finishing edge, but should be thoroughly cleaned off before putting the stone away.

Fine-grained, hard stones should always be used with oil, as water is not thick enough to keep the steel out of the pores. The dirty oil should always be wiped off the stone, thoroughly, as soon as possible after using it. This is very important for if left on the stone, the oil dries in, carrying the steel dust with it and causing the stone to glaze. Cotton waste and kerosene oil, gasoline or ammonia are best for cleaning a stone and are always to be found in a shop. Never use turpentine to clean a stone, for it is gummy and fills the pores of the stone. Some carpenters use shavings, but these are apt to leave the stone full of dust. An ordinary clean rag would be better.

How to Select Oilstones.

The question now arises, how shall we select a stone for our use? First, we should consider the purpose for which a stone is to be used. Do we want a fast cutting stone in preference to a slow-cutting stone? There are three kinds of cutting edges—coarse, medium and fine; also, oilstones are made in three grades—coarse, medium and fine.

The coarse stones are used for sharpening large and very dull tools, nicked tools, machine knives and for general use where fast-cutting is more desirable than fine finish.

The medium stones are for mechanics' tools in general; more particularly those used by carpenters and in woodworking establishments. This grit gives a medium fine edge.

Fine stones are used by machinists and engravers, die workers, instrument makers and all who require a very fine, keen edged tool.

Practically all the coarse-edged tools are knives. By "coarse" edge we do not mean it is not a sharp edge. The ideal edge for a carving knife is a "coarse" edge

- best because such an edge will do its work perfectly and because to take extra time to get a finer edge on a slower cutting stone would be just a waste of time. Knives do not require a fine edge because they are always used with a diagonal or saw-like motion. This adds to the cutting efficiency and at the same time the slight coarseness of edge, in its turn, adds to the saw-like effect, again making the cutting easier. These tools include canvas cutting knives, carpet knives, carving knives, bread knives, paring, kitchen, household and farm knives of all kinds. Some of these tools require a finer edge than others, but all can be given the best edge for their work on a coarse stone.

Medium edge tools require more smoothness than a coarse edge affords but yet do not need extreme fineness. These are the tools used by most mechanics—more particularly the broad, bevel-edged tools such as chisels, planes, draw knives and others used by carpenters and wood workers.

One would naturally suppose that to secure a medium edge he should use a stone of medium grit. This is not entirely correct. The average mechanic buys the medium grit stone in order to secure both fast cutting and a fine enough edge from one stone. Except for special uses, the more satisfactory way is to use a coarse stone for rapidly cutting the edge down until it is ready to finish and then to finish on a fine stone to whatever degree of fineness is desired. For this reason, a Combination stone, which unite a coarse stone and a fine stone, is more useful than a medium stone. Combination stones are becoming more and more popular among users of oilstones.

The fine edged tools are for special purposes, being largely used in the professions. The surgeon and dentist, leather workers and engravers like them. The scientist uses them in the preparation of specimens for the microscope.

Prize Contest for Carpenters

The Fox Supply Co., Brooklyn, Wis., have deposited with the Brooklyn (Wis.) State Bank the sum of \$50 which is to be given to the winners of a photograph contest, and this sum will be held by the bank until paid to the winners. Canadian carpenters using Fox floor scrapers are eligible to enter the contest.

Three prizes will be awarded for the best photographs showing the work done by the Fox floor scraper. The money is to be divided as follows:—First prize, \$25; second prize, \$15; third prize, \$10. It costs nothing to enter the contest.

To enter, have a photograph taken of either the finished floor or showing the actual process of scraping. Any size photograph will do, but it must be large enough to show details. The picture should be packed carefully and sent to the Fox Supply Co., Brooklyn, Wis. The contest closes January 1st, 1913. No photograph will receive a prize which arrives after that day. Photos should be sent not later than December 20th, so that they will get it before January 1st. To prevent any possible opportunity for favoritism, the judges have been selected as follows: Bernard L. Johnson, Editor of the American Carpenter and Builder; Fred A. Hodgson, President of the National Builder; and R. J. Neckerman, Secretary of the Fox Supply Co. Each contestant will receive full consideration and a square deal is guaranteed.

Rules of the Contest.

1. All photographs sent become the property of the Fox Supply Co., with rights of publication, and will not be returned.

2. No picture received after January 1st can receive a prize.

3. Each prize winner must be able and willing to sign an affidavit that the entire flooring shown in his photograph was scraped by a Fox No. 1 Floor Scraper.

4. Write your name and the date the picture was taken on the back of the photograph.

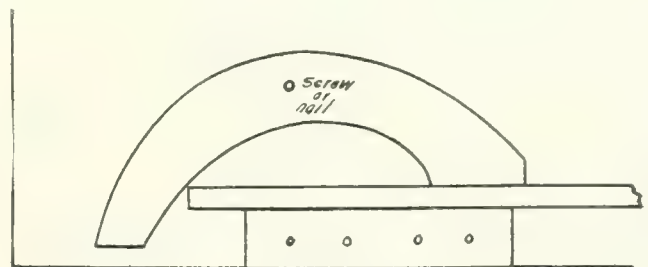
5. Make no marks whatever on the face of the photograph.

6. Announcement of the winners will be made in the February numbers of the American Carpenter and Builder, the National Builder and The Canadian Builder.

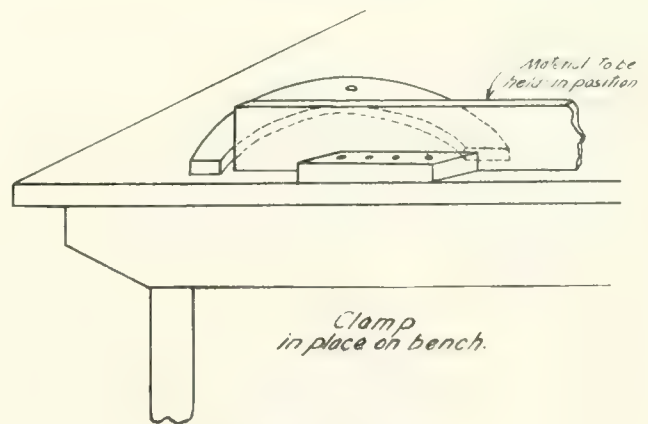
Goose Neck Bench Clamp

By George W. Carter

The goose neck bench clamp shown in the accompanying illustrations, is made very quickly and easily and will hold any material firmly, the harder the material is to joint up, the tighter the clamps will hold



Top View.



Clamp in place on bench.

Goose neck bench clamp.

the material. All carpenters and contractors should provide themselves with these devices for use on benches. It can be very easily made and may be placed on the bench in five or ten minutes.

Suspending the Gainer

There is a great variety of gainers and dado machines, and lot of wrinkles are used in connection with them. One of these is the suspending of the cutting equipment of an ordinary gang gainer from overhead, so that long material can be handled. To get the idea just right, get before you the picture of an ordinary gang gainer, study it a while, and you can see how it is practical to cut away the frame supporting the mandrel and its journals, and reverse the order of it, swinging it from above, leaving only the carriage and ways on the floor. This arrangement makes the carriage open

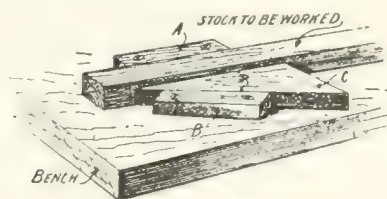
at the ends, so that stock of any length can be handled over it. Another wrinkle along this line is the portable overhead gainer that is taken right out on the job where there is heavy framing to do. Woodworker.

Rough Lumber and The Tariff

The following decision re the entry of rough lumber was handed out on October 29 and is of interest to Canadian builders especially those in Western Canada: In Supreme Court the appeal in the celebrated case of the Foss Lumber Company, of Winnipeg vs. the British Columbia Lumber and Shingle Manufacturers, involving the question of entry into Canada of a certain class of rough lumber, was sustained. The appeal was from a judgment of Mr. Justice Cassels, of the Exchequer Court, who on stated cases submitted by the Dominion Government found that under the customs tariff, item No. 504, duty is collectable on certain classes of lumber because it does not conform to customs tariff item No. 504, which says that rough lumber to secure free entry must be "dressed one side only, and not further manufactured." Duty was collected on a carload imported by the Foss Lumber Company, and when the matter went to the Exchequer Court the British Columbia lumber interest contended that this lumber had gone through more than one process of manufacture in being reduced to dimensions and was therefore dutiable. Mr. Justice Cassels agreed with this view, and gave a judgment accordingly. The Supreme Court takes the opposite view, and this means that this class of rough lumber will continue to come into Canada duty free in future as it has in the past. Justices Duff and Idington dissented from the judgment given.

A Simple Vise

The accompanying engraving shows a very handy and easily made vise or clamp contributed by B. Francis Dashiell to the Scientific American. At A is a piece of dressed hardwood 12 inches by 2 inches by 1 inch. It is screwed upon the bench or table top. Another piece B of the same dimensions is screwed on about 8 inches



A simple carpenter's vise

away and at an angle of 30 degrees to A. A triangular piece C with its hypotenuse about 15 inches long is used as a wedge.

The stock that is to be worked is placed up against the piece A, and the wedge C is driven up tightly, thus clamping the stock firmly.

May Build Civic Brick Plant

Brick clay has been discovered on the Civic Industrial Farm up Yonge street, and samples of it have been sent to an expert to be tested. Should it prove to be of good quality steps will be taken to ascertain the area of the clay. If the quantity is sufficient to warrant it the industry of brick-making will be established

on the farm, in which case the farm will be a valuable asset to the city, as the new industry will provide ample work for the prisoners sent up there. Further, the city will have the advantage of a large supplemental supply of brick for use on the various public works.

—Toronto Mail and Empire.

Permits Granted in October 1912

City.	1912.	1911.	Inc.	%
Bathurst	\$ 20,250	\$ 18,800	\$ 1,450	7.7
Brantford	95,940	54,055	41,885	77.5
Chatham	13,916	23,025	*9,109	39.5
Galt	80,143	41,546	38,597	92.9
Guelph	18,760	12,456	6,304	291.6
Halifax	35,745	43,588	*7,843	18.0
Hamilton	383,400	335,000	48,400	14.4
Kingston	142,145	69,143	73,002	105.5
London	91,053	82,934	8,119	9.8
Montreal	214,800	19,500	205,300	335.9
Ottawa	2,416,508	1,686,483	1,160,025	68.7
Peterborough	202,125	390,250	*188,125	48.2
Preston	109,695	11,047	98,648	649.4
St. Catharines	42,200	4,400	37,800	859.0
St. John	43,950	7,200	36,750	510.4
Sault Ste. Marie	52,500	211,100	*158,600	75.1
Stratford	63,775	16,200	7,575	293.6
Sydney	36,145	13,340	22,805	170.9
Toronto	102,900	7,950	94,950	1196.6
Welland	1,573,620	1,798,042	*224,422	12.5
Windsor	19,550	8,592	10,958	127.5
Brandon	195,500	38,200	157,300	411.7
Calgary	17,600	28,000	*10,400	37.1
Dauphin	1,595,490	803,160	792,330	98.6
Edmonton	9,300	10,400	*1,100	10.5
Fort William	820,950	x413,025	405,925	97.8
Kamloops	562,450	538,300	24,150	4.5
Lethbridge	57,675	74,200	*16,525	22.2
Macleod	72,270	57,060	15,210	26.6
Medicine Hat	15,000	6,800	8,200	120.5
Moose Jaw	254,520	100,780	153,740	152.5
Nanaimo	311,150	55,960	255,190	456.0
Nelson	40,975	17,550	23,425	13.3
New Westminster	9,450	11,000	*1,550	14.1
North Battleford	103,535	89,960	13,575	15.1
Oak Bay	70,190	9,330	60,860	652.3
Port Arthur	132,288	34,650	97,638	281.8
Prince Albert	76,700	28,000	48,700	173.9
Red Deer	140,175	11,600	128,575	1108.4
Regina	43,900	23,575	20,325	86.2
St. Boniface	411,275	674,740	*263,465	39.0
Saskatoon	224,700	55,200	179,500	325.1
Vancouver	323,145	724,510	*401,365	55.4
Vernon	3,597,165	1,506,375	2,090,790	138.8
Victoria	42,900	3,890	39,010	1002.8
Winnipeg	387,215	563,125	*175,910	31.2
	1,159,950	1,152,500	7,450	.6
Total 22 East cities..	\$6,514,595	\$4,896,435	\$1,618,160	33.0
Total 25 West cities..	10,480,268	6,993,690	3,486,578	49.8
Total East and West.	\$16,994,863	\$11,890,125	\$5,104,738	42.9
South Vancouver	133,900			
Swift Current	54,790			
Weyburn	92,260			
Yorkton	23,250			

Grand total (51).. \$17,299,063

*Decrease. xIncludes Strathcona.

—Reproduced from Financial Post.

"While several local companies are now engaged in the business of building houses for dwelling purposes," said George M. Hall, industrial commissioner of Edmonton, "there is room in Edmonton for concerns possessed of large capital to engage in house building upon an extensive scale. Edmonton needs fully 2,500 four to six-roomed houses, which could be built and sold at a good profit on the investment." House builders report they are at least two years behind, partly due to the lack of materials and skilled workmen, but chiefly as the result of the large influx of population. More than 2,700 persons are living in tents outside of the fire limits.

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| <input type="checkbox"/> Estimating | <input type="checkbox"/> Structural Design |
| <input type="checkbox"/> Plan Reading | <input type="checkbox"/> Mechanical Drawing |
| <input type="checkbox"/> House Planning | <input type="checkbox"/> Machine Drafting |
| <input type="checkbox"/> Building Superintendence | <input type="checkbox"/> Machine Design |

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The advertising you will get from the appearance of your house in the paper will make it well worth your while.

The Canadian Builder

McKinnon Bldg.

Toronto

Price List of Building Materials - Revised to Date

Hemlock Lumber	PRICE AT MONTREAL	PRICE AT TORONTO	PRICE AT WINNIPEG	PRICE AT VANCOUVER
2 x 4 in. to 2 x 12 in., 8 to 14 ft.	\$20.00	\$25.00		
2 x 4 in. to 2 x 12 in., 16 ft.	22.00	25.00		
2 x 4 in. to 2 x 12 in., 18 ft.		26.00		
1 in. Hemlock No. 1	20.00	20.00 to 23.00		
No. 1 hemlock saw log	23.00	23.00		
No. 2 hemlock saw log and 1 in.		16.00 to 18.00		
Pine				
1 in. common pine, 8 to 12 in. wide, rough	\$27.00 to 30.00	\$27.00 to 30.00		
2 in. white pine, bill stock	29.00 to 33.00	29.00 to 33.00		
3 x 8 and 10 in. pine sheathing	36.00 to 40.00	36.00 to 40.00		
7 x 12 pine sheathing	42.00	45.00		
No. 1 white pine flooring	40.00	32.00		
No. 1 spruce flooring	30.00	26.00		
No. 1 pine decking, D2S	40.00	30.00		
Spruce pine decking		25.00		
No. 1 pine V. or beaded sheeting	37.00	35.00		
No. 2 pine V. or beaded sheeting	31.00	31.00		
Pine Trim for Paint Finish				
4 in. casing, per 100 ft.	\$2.00	\$2.00		
5 in. casing, per 100 ft.	2.00	2.25		
8 in. pine base, per 100 ft.	3.50	3.25		
10 in. pine base, per 100 ft.	4.25	4.25		
4 in. pine window stool, per 100 ft.	2.75	2.75		
Shingles, Lath Roofing, Etc.				
XXX B. C. cedar shingles		\$3.75 per M	\$4.00 & 3.50 per M	\$2.10 & 2.00 per M
N. B. Extras		3.60		
N. B. Clears		2.90		
No. 1 pine lath	5.00	4.75 per M	5.75 per M	2.75 per M
No. 2 pine lath	4.50	4.25		
No. 1 spruce lath	4.00	4.00		
Metal lath			.15 to .19	
Roofing Felt (2 ply)			2.50 per roll	
Cedar Posts—Fence				
5 in. at small end	50c. foot	.25 each		
7 in. at small end	70c. foot	.35 each		
Hardware				
Nails, wire, common	\$2.35 base keg	\$2.40 cwt.	\$3.70 per keg	\$3.25 per keg
Nails, cut, common	2.55 "	2.75	3.70	4.25
Sash weights, cast iron	1.50 per 100 lbs.	1.65		
Tarred felt paper	.40 roll	1.65	.90 per roll	.62½ per roll
Building paper	.30 roll		.75	.70
Insulating paper			1.25	
Brick, Tile, Terra Cotta, Sewer Pipe				
No. 1 dry pressed red brick	19.50	\$18.00 per M	\$25.00 to 50.00	\$45.00 per M
No. 1 dry pressed buff bricks	20.50	18.00	25.00 to 50.00	45.00
Red stock bricks	11.00	12.00	13.00	13.50
Grey stock bricks		11.00		
Wire cut bricks for foundation work		11.00		
Porous terra cotta bricks		15.00	\$15.00 per M	
No. 1 enamelled bricks, all colors, from		80.00 to 150.00	100.00	
Fire brick	25.00		45.00	45.00
Roofing tile			.15 per ft.	
Sewer pipe, 4 inch	10c. foot		.08½ per ft.	.15 per ft.
Sewer pipe, 6 inch	15c. foot		.16½ per ft.	
Cement, Plaster, Stone, Etc.				
Cement (bags extra)	1.80 bbl.	\$1.90 bag	\$2.50 per bbl.	\$3.25 per bbl.
Sand, for cement or brick work	1.00 ton	1.15 a yard	1.75 a yard	
Lime	12.00	.38 cwt.	.32 per bu.	1.35 per bbl.
Hydrated lime	13.00		12.00 per ton	4.25 per bbl.
Mortar color	5.00 bbl.		.05 per lb.	
Plaster of paris	2.35	3.10 bbl.	4.00 per bbl.	4.25 per bbl.
Crushed stone, 2 in.	1.50 ton	1.30	2.75 per yard	
Crushed stone, 1 in.	1.60	1.35	2.75	
Crushed stone, ¾ in.	1.75	1.45	2.75	
Hardwall plaster	\$12.50 neat		12.50 per ton	15.00 per ton
	6.00 sanded ton			
Gravel	1.85 ton		1.85 per yard	
Hair (plaster)	.03 per lb.		1.25 per bale	15.00 per ton

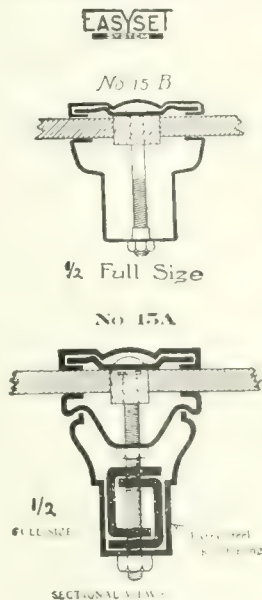
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Ask for
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Bar.

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A reinforced
Dividing Bar
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steel rein-
forcement.
No broken
plates where
this bar is
used.

Our No. 15 A Bar will carry the largest plates
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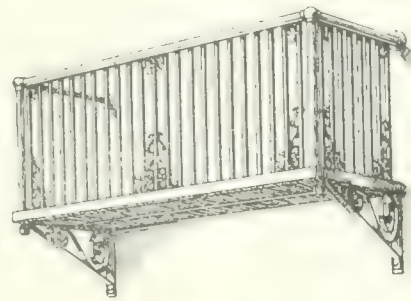
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To those contemplating building whether it be a home, an
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Asbestos Goods

Asbestos Mfg. Co., Montreal.

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Alabastine Co., Paris, Ont.

Automatic Gas-Steam Boilers.

Consumers' Gas Co., Toronto.

Bath Tubs.

Standard Ideal Co., Port Hope, Ont.

Beaded Sheets.

Metal Shingle & Siding Co., Preston, Ont.

Burial Vault Molds.

Ideal Concrete Machinery Co., London, Ont.

Closets.

Standard Ideal Co., Port Hope, Ont.

Ceilings, Metal.

Metal Shingle & Siding Co., Preston, Ont.

Ceilings and Walls, Embossed Steel.

Galt Art Metal Co., Galt, Ont.

Colors for Concrete.

Ideal Concrete Machinery Co., London, Ont.

Concrete Block Machines.

Ideal Concrete Machinery Co., London, Ont.

Wettlaufer Bros., Toronto.

Concrete Brick Machine.

Ideal Concrete Machinery Co., London, Ont.

Wettlaufer Bros., Toronto.

Concrete Sill, Lintel and Dimens. on Stone Machines.

Ideal Concrete Machinery Co., London, Ont.

Concrete Mixers.

Ideal Concrete Machinery Co., London, Ont.

Wettlaufer Bros., Toronto.

Concrete Tile Machines.

Wettlaufer Bros., Toronto.

Concrete Reinforcements.

Metal Shingle & Siding Co., Preston, Ont.

Cornices, Galvanized or Copper.

Galt Art Metal Co., Galt, Ont.

Corrugated Sheets (Asbestos)

Asbestos Mfg. Co., Montreal.

Corrugated Sheets (Steel)

Galt Art Metal Co., Galt, Ont.

Metal Shingle & Siding Co., Preston, Ont.

Crestings.

Metal Shingle & Siding Co., Preston, Ont.

Curb Stone Machines.

Ideal Concrete Machinery Co., London, Ont.

Cutouts.

Duncan Electrical Co., Montreal.

Daylight Rods.

Consolidated Plate Glass Co., Toronto.

Derricks.

Ideal Concrete Machinery Co., London, Ont.

Doors.

Canada Lumber Co., Toronto.

L. A. DeLapante, Limited, Toronto.

Georgian Bay Shook Mills, Limited, Midland, Ont.

Door Trimmings.

Metal Shingle & Siding Co., Preston, Ont.

Drinking Fountains.

Standard Ideal Co., Port Hope, Ont.

Eavestrough.

Metal Shingle & Siding Co., Preston, Ont.

Eave-Trough and Conductor-Pipe.

Galt Art Metal Co., Galt, Ont.

Metal Shingle & Siding Co., Preston, Ont.

Electrical Specialties.

Duncan Electrical Co., Montreal.

Expanded Metal.

Galt Art Metal Co., Galt, Ont.

Fences.

George B. Meadows, Toronto.

Finials.

Galt Art Metal Co., Galt, Ont.

Metal Shingle & Siding Co., Preston, Ont.

Fire Escapes.

George B. Meadows, Toronto.

Fireproof Windows.

Galt Art Metal Co., Galt, Ont.

Metal Shingle & Siding Co., Preston, Ont.

Flooring, Hardwood.

Georgian Bay Shook Mills, Midland, Ont.

Floor Scrapers.

Fox Supply Co., Brooklyn, Wis.

Hurley Machine Co., Limited, Toronto.

Forge and Rivet Heaters.

Consumers' Gas Co., Toronto.

Galvanized Chain Pumps.

Metal Shingle & Siding Co., Preston, Ont.

Galvanized Iron Cornices.

Metal Shingle & Siding Co., Preston, Ont.

Galvanized Tanks.

Metal Shingle & Siding Co., Preston, Ont.

Gas Blow Pipes.

Consumers' Gas Co., Toronto.

Gas Engines.

Consumers' Gas Co., Toronto.

Gas Furnaces.

Consumers' Gas Co., Toronto.

Gas Lighting Appliances.

Consumers' Gas Co., Toronto.

Gas Fixtures.

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Gas Piping.

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Gas Ranges.

Consumers' Gas Co., Toronto.

Gas Water Heaters.

Consumers' Gas Co., Toronto.

Gates.

George B. Meadows, Toronto.

Glass.

Consolidated Plate Glass Co., Toronto.

Glue Pot Heaters.

Consumers' Gas Co., Toronto.

Granite (Crushed)

Sand & Supplies, Toronto.

Hammers.

Double Claw Hammer Co., Brooklyn, N.Y.

Lewis Bros., Montreal.

Hand Scrapers.

Fox Supply Co., Brooklyn, Wis.

Herringbone Lath.

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Incinerators.

Standard Ideal Co., Port Hope, Ont.

Interior House Finish.

L. A. DeLapante, Limited, Toronto.

Georgian Bay Shook Mills, Midland, Ont.

Lath.

Galt Art Metal Co., Galt, Ont.

Laundry Tubs.

Standard Ideal Co., Port Hope, Ont.

Lumber

Canada Lumber Co., Toronto.

Metal Roofing and Siding.

Galt Art Metal Co., Galt, Ont.

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Ideal Concrete Machinery Co., London, Ont.

Mouldings.

L. A. DeLapante, Limited, Toronto.

Georgian Bay Shook Mills, Limited, Midland, Ont.

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George B. Meadows, Toronto.

Ornamental Molds.

Ideal Concrete Machinery Co., London, Ont.

Plaster.

Alabastine Co., Limited, Toronto.

Plaster Corner Bead.

Metal Shingle & Siding Co., Preston, Ont.

Plaster Paris.

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Plumbing Goods.

Standard Ideal Co., Limited, Port Hope.

Pulpstone.

Alabastine Co., Paris, Ont.

Pumps.

Wettlaufer Bros., Toronto.

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George B. Meadows, Toronto.

Receptacles (Electrical).

Duncan Electrical Co., Montreal.

Ridge, Galvanized.

Metal Shingle & Siding Co., Preston, Ont.

Ridgings.

Metal Shingle & Siding Co., Preston, Ont.

Roofing.

Asbestos Mfg. Co., Montreal.

Galt Art Metal Co., Galt, Ont.

Metal Shingle & Siding Co., Preston, Ont.

Patterson Mfg. Co., Limited, Toronto.

Sand and Gravel

Sand & Supplies, Toronto.

Sash.

L. A. DeLapante, Limited, Toronto.

Georgian Bay Shook Mills, Limited, Midland, Ont.

Scraper Knives.

Fox Supply Co., Brooklyn, Wis.

Scrapers.

Fox Supply Co., Brooklyn, Wis.

Hurley Machine Co., Toronto.

Scraper Sharpening Device.

Fox Supply Co., Brooklyn, Wis.

Seats, Implement.

Galt Art Metal Co., Galt, Ont.

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Soil Pipe.
Standard Ideal Co., Port Hope, Ont.

Soil Pipe Fittings.
Standard Ideal Co., Port Hope, Ont.

Soldering Iron Heaters.
Consumers' Gas Co., Toronto.

Shingles, Galvanized Steel.
Galt Art Metal Co., Galt, Ont.

Shingles, Metal.
Metal Shingle & Siding Co., Preston, Ont.

Shooks.
Georgian Bay Shook Mills, Midland, Ont.

Skylights.
Galt Art Metal Co., Galt, Ont.
Metal Shingle & Siding Co., Preston, Ont.

Sidewalk Prisms.
Consolidated Plate Glass Co., Toronto.

Siding, Steel.
Galt Art Metal Co., Galt, Ont.

Sill and Cap Molds.
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Sinks (Kitchen and Wash).
Standard Ideal Co., Port Hope, Ont.

Spanish Roofing Tile Machines.
Ideal Concrete Machinery Co., London, Ont.

Stairs, Iron.
George B. Meadows, Toronto

Stanchions.
Metal Shingle & Siding Co., Preston, Ont.

Steel Buildings and Garages.
Metal Shingle & Siding Co., Preston, Ont.

Steel Ceilings and Walls.
Galt Art Metal Co., Galt, Ont.

Stone (Crushed)
Sand & Supplies, Toronto.

Store Front Bars.
Consolidated Plate Glass Co., Toronto.

Terra Cotta.
Toronto Plate Glass Importing Co., Toronto.

Timbles.
Metal Shingle & Siding Co., Preston, Ont.

Urinals.
Standard Ideal Co., Port Hope, Ont.

Valley, Galvanized.
Metal Shingle & Siding Co., Preston, Ont.

"V" Crimp Roofing and Siding.
Metal Shingle & Siding Co., Preston, Ont.

Ventilators.
Galt Art Metal Co., Galt, Ont.
Metal Shingle & Siding Co., Preston, Ont.

Wall Plugs.
Ideal Concrete Machinery Co., London, Ont.

Wall Coating.
Alabastine Co., Paris, Ont.

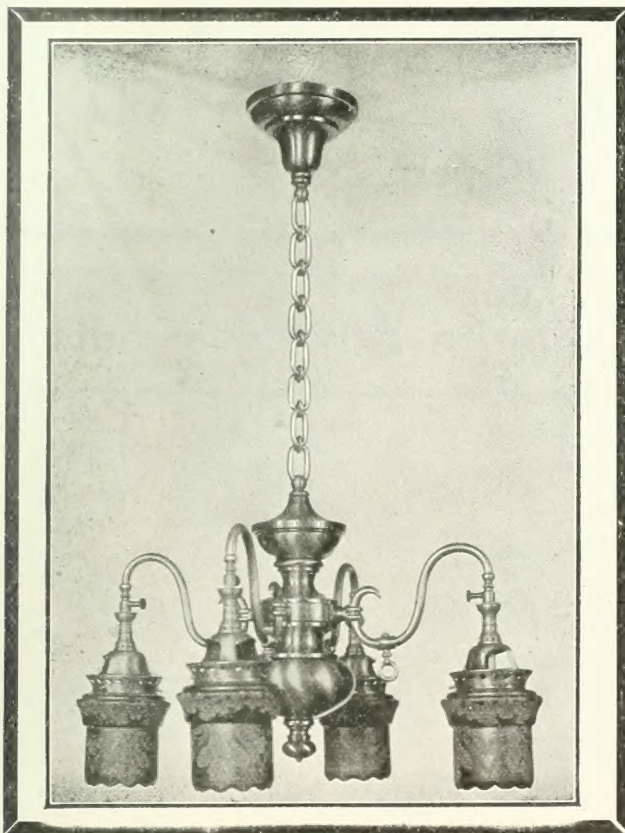
Waterproofing.
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Watering Bowls for Stock.
Metal Shingle & Siding Co., Preston, Ont.

Window Trimmings.
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Gas sheds an intense white light, and when used in artistic fixtures makes them an ideal setting for an efficient and reliable illuminant. You get a steady white light, no eye strain, no flickering.

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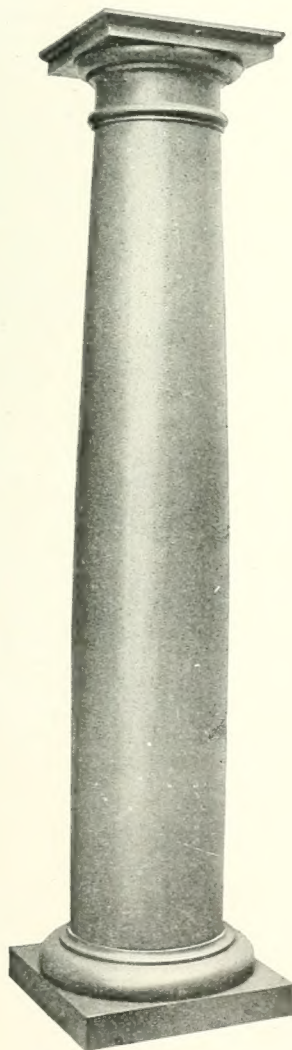
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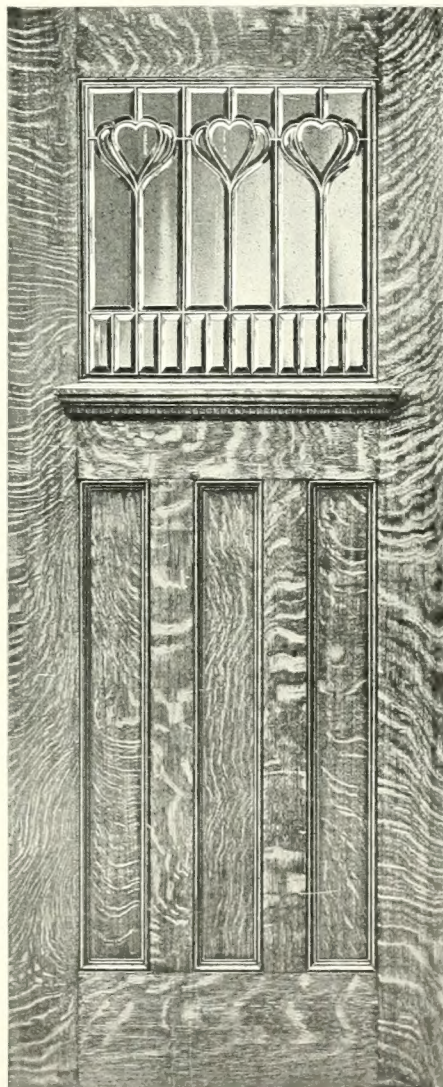
Our Columns Newels Balusters and Interior Finish will give entire satisfaction as you will be convinced by a trial order.

We are in a position to give prompt delivery in all stock goods.



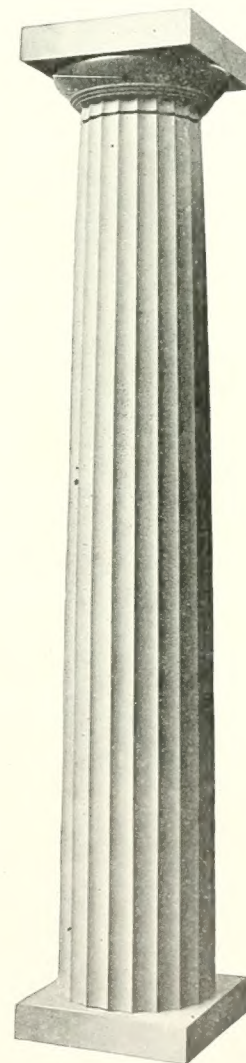
Design B.L. No. 1			
Length	8in.	10in.	12in.
4 feet	Price \$2.25	\$3.00	\$5.00
5 feet	Price 2.40	3.25	5.50
6 feet	Price 2.50	3.40	5.75
8 feet	Price 3.10	4.20	6.75
9 feet	Price 3.50	4.75	7.50
10 feet	Price 3.75	5.00	8.00

Builders allowed 10% discount on above
8, 10 and 12in. columns.



B.L. No. 314, 1/4-Cut Oak

Sizes in Stock		1/4-Cut Oak	Pine
2ft. 8in. x 6ft. 8in.	—1 3/4 in.	Price \$8.50	\$4.00
2ft. 10in. x 6ft. 10in.	—1 3/4 in.	Price 8.50	4.25
3ft. 0in. x 7ft. 0in.	—1 3/4 in.	Price 9.00	4.50



Design B.L. No. 6

Length	10in.	12in.	14in.
6 feet	Price \$6.80	\$8.85	\$10.60
8 feet	Price 8.70	9.95	11.95
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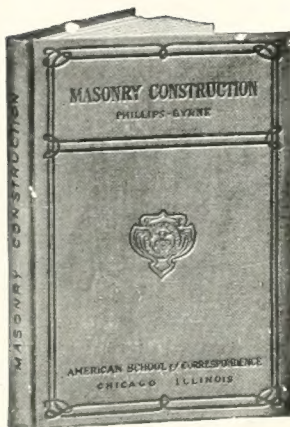
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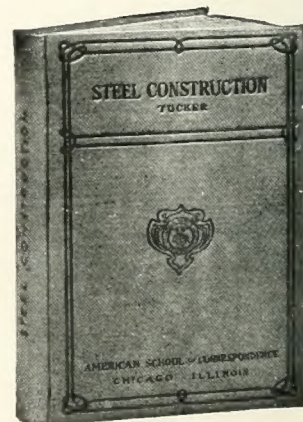
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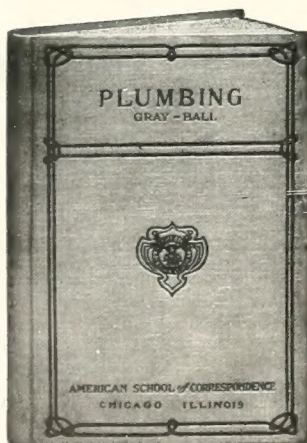
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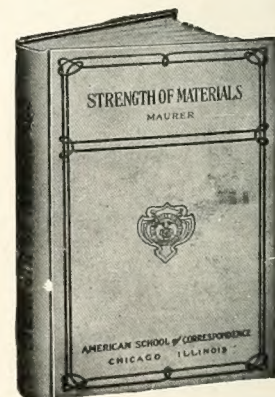
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